5-4310-363-14

TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL

COMPRESSOR, RECIPROCATING AIR, 15 CFM, 175 PSI, TANK MOUNTED, GED

(BAUER MODEL KAB-545-15) NSN 4310-01-069-6935

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HEADQUARTERS, DEPARTMENT OF THE ARMY
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CHANGE
No. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 9 April 1987

Operator's, Organizational, Direct Support
and General Support Maintenance Manual

COMPRESSOR, RECIPROCATING AIR,
15 CFM, 175 PSI, TANK MOUNTED, GED
(BAUER MODEL KAB-545-15)
NSN 4310-01-069-6935

TM5-4310-363-14, 23 May 1980, is changed as follows:

1. Remove and insert pages as indicated below. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

Remove pages	Insert pages
i and ii	i and ii
1-1 and 1-2	1-1 and 1-2
4-9 and 4-10	4-9 and 4-10
4-43 through 4-46	4-43 through 4-46
B-3 and B-4	B-3 and B-4

2. Retain this sheet in front of manual for reference purposes.

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.,
General, United States Army
Chief of Staff

Official:

R. L. DILWORTH
Brigadier General, United States Army
The Adjutant General

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To be distributed in accordance with DA Form 12-25A, Operator's, Organizational, Direct Support and General Support Maintenance Requirements for Compressor, Reciprocating, Air, Gas, Tank Mounted, 15 CFM, 175 PSI (KAB-545-15) (TM 5-4310-363 Series)

SAFETY PRECAUTIONS

WARNING

Pay particular attention to specific cautions and warnings throughout this manual.

DEATH

or severe burns or injury may result if personnel fail to observe safety precautions.
Do not smoke or use open flames that may ignite the fuel vapors while gasoline tank is being filled.
Always maintain metal to metal contact when filling the fuel tank.
Do not attempt to fill fuel tank when compressor is running.

DANGEROUS GASES

are generated as a result of operating this equipment.
Do not operate compressor in enclosed areas unless exhaust gases are properly vented to the outside.
Exhaust discharge contain noxious and deadly fumes.
Be extremely careful when using carbon tetrachloride fire extinguisher in an enclosed area.
A poisonous gas is generated by the contact of carbon tetrachloride with a heated metallic surface.
Provide adequate ventilation before entering the enclosed area where carbon tetrachloride has been used.

CAUTION

DAMAGE

to the equipment may result if personnel fail to observe safety precautions.
Be sure that all guards and shrouds are in place before starting the unit.
Never attempt to service any of the air compressor components until the engine is stopped and the unit is relieved of all air pressure.

WARNING

This compressor is NOT SUITABLE for the supply of air for charging cylinders with BREATHABLE AIR.

WARNING

Operation of this compressor presents a NOISE HAZARD to personnel in the area.
The noise level exceeds the allowable limits for unprotected personnel.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property.
Avoid repeated and prolonged skin contact.
Do not use near open flame or excessive heat.
Flash point of solvent is 100° F. (38° C) —138° F. (59° C.).

TECHNICAL MANUAL

No. 5-4310-363-14

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *23 May 1980*

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL

COMPRESSOR, RECIPROCATING AIR,

15 CFM, 175 PSI, TANK MOUNTED, GED

(BAUER MODEL KAB-545-15)

NSN 4310-01-069-6935

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistake or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, U.S. Army Troop Support Command, ATTN: AMSTR-MCTS, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798. A reply will be furnished directly to you.

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CHAPTER 1
INTRODUCTION

SECTION I. GENERAL

1-1. SCOPE

This manual is for your use in operating and maintaining the reciprocating air compressor, Bauer Model KAB-545-15.

1-2. MAINTENANCE FORMS AND RECORDS

Maintenance forms and records that you are required to use are as follows:

a. DA Form 2404 (Equipment Inspection and Maintenance Worksheet).

b. DA Form 2407 (Maintenance Request Used for Requesting Support Maintenance).

c. DA Form 2407-1 (Continuation Sheet Used for Requesting Support Maintenance).

d. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, the Army Maintenance Management System (TAMMS).

1-3. REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S)

EIR's can any must be submitted by anyone who is aware of an unsatisfactory condition with the equipment design or use. It is not necessary to show a new design or list a better way to perform a procedure, just simply tell why the design is unfavorable or why a procedure is difficult. EIR's may be submitted on SF 368. Mail direct to Commander, US Army Troop Support Command, ATTN: AMSTR-QX, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798. A reply will be furnished to you.

1-4. WARRANTY INFORMATION

The Model KAB545-15 is warranted by Bauer Compressors, Inc. for 12 months. It starts on the date found in block 23, DA Form 2409-9, in the logbook. Report all defects in material or workmanship to your supervisor, who will take appropriate action through your organizational maintenance shop.

SECTION II. EQUIPMENT DESCRIPTION

1-5. DESCRIPTION

a. General. The Model KAB-545-15 air compressor consists of a reciprocating type compressor, gasoline engine, fuel tank, and air receiver assembly which are all attached to a base. This base is mounted to a trailer (Figs. 1-1, 1-2, and 1-3).

b. Compressor. The compressor is a two-cylinder, two-stage, vertical, air-cooled unit V-belt driven. It will deliver 15 cfm (cubic feet per minute) at 175 psi (pounds per square inch) (12.3 kg per sq cm) (kilograms per square centimeter) when driven at 735 rpm (revolutions per minute). Constant speed unloading is provided. Constant speed operation allows the compressor to run continuously without stopping or starting the engine after each cycle. The compressor stops compressing air and runs free until the pressure in the air receiver has dropped to a predetermined setting at which time the compressor starts compressing air again until the pressure reaches its predetermined limit.

c. Engine. The engine is military standard Model 4A032-11.

d. Air Receiver Tank. The air receiver tank for air compressor has a capacity of 2.7 cubic feet (20 gallons) and a maximum working pressure of 175 psi (12.3 kg per sq cm). A tool box assembly is attached to the top of the air receiver.

e. Trailer. The trailer is military standard Model M-569, 1/4 ton.

1-6. TABULATED DATA

a. Identification. The air compressor has two major identification plates. The information contained on these plates is listed below:

(1) Identification plate. The identification plate specifies the name of the manufacturer, make, model number, date of manufacture, serial number, and National stock number of the complete unit. The plate is mounted on the mounting base and is illustrated as Figure 1-4.

(2) Air receiver plate. This plate specifies the air receiver manufacturer and other ASME data. It is mounted on the air receiver.

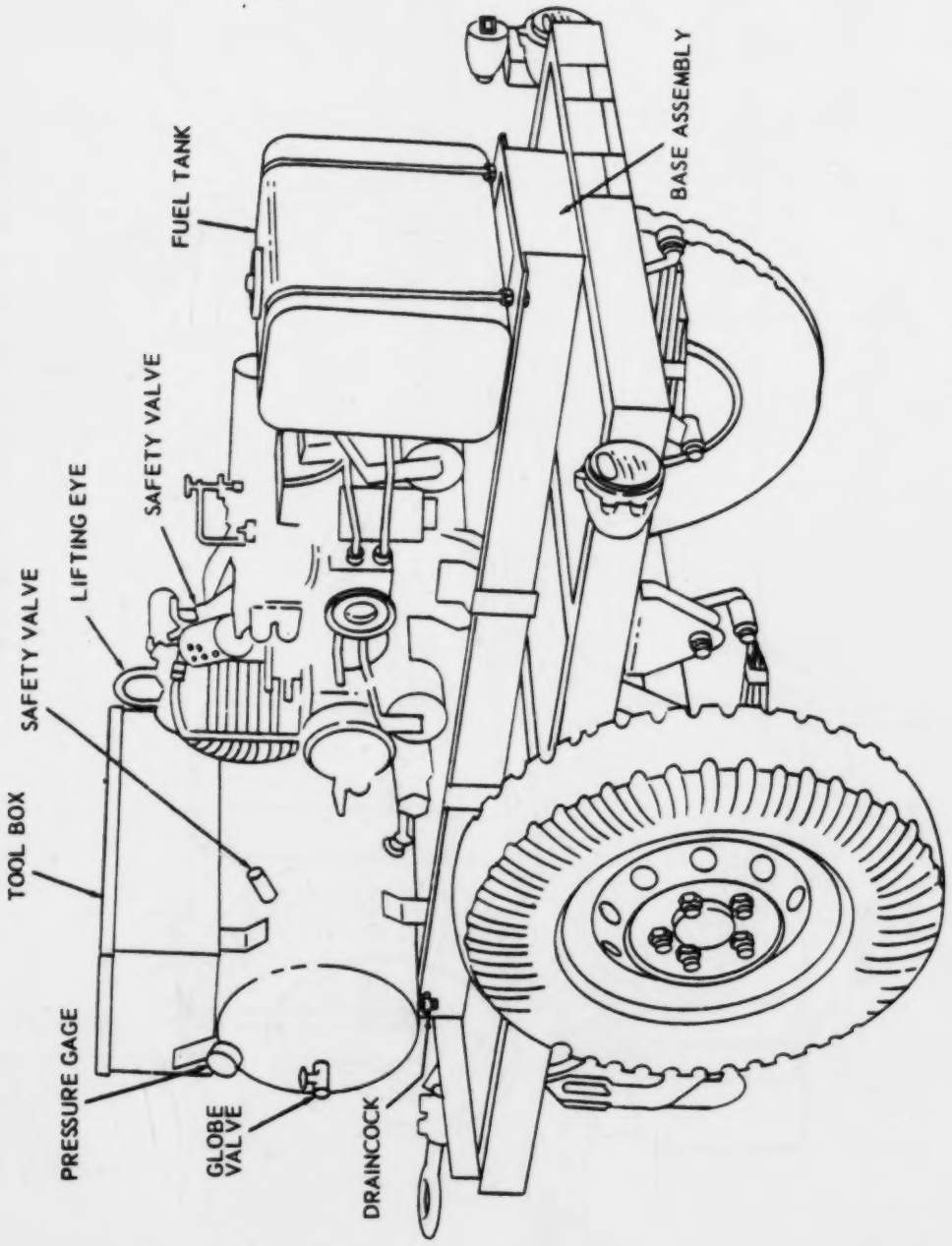


Figure 1-1. Air compressor model KAB-545-15, left rear, three quarter view.

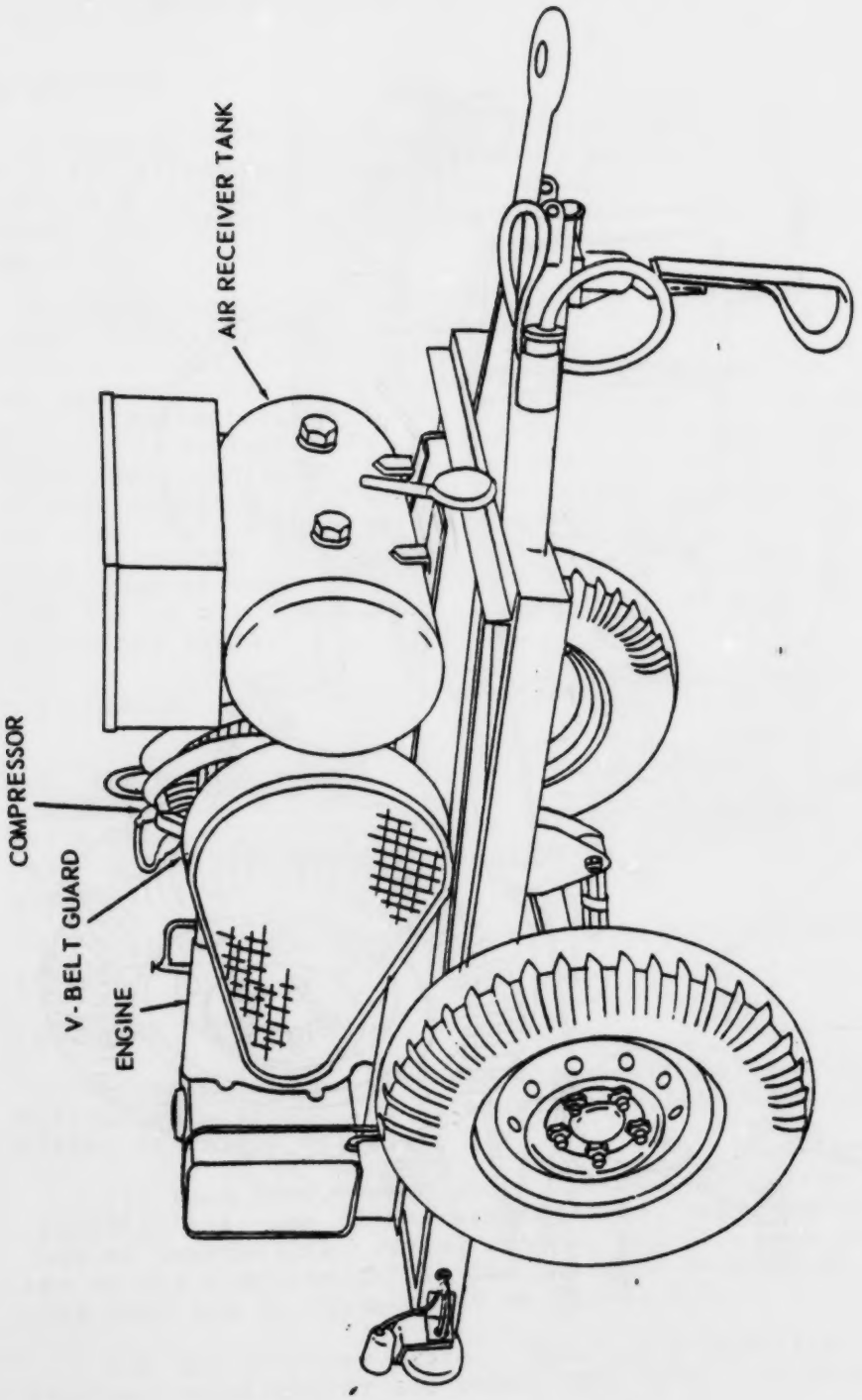


Figure 1-2. Air compressor model KAB-545-15, right front, three quarter view.

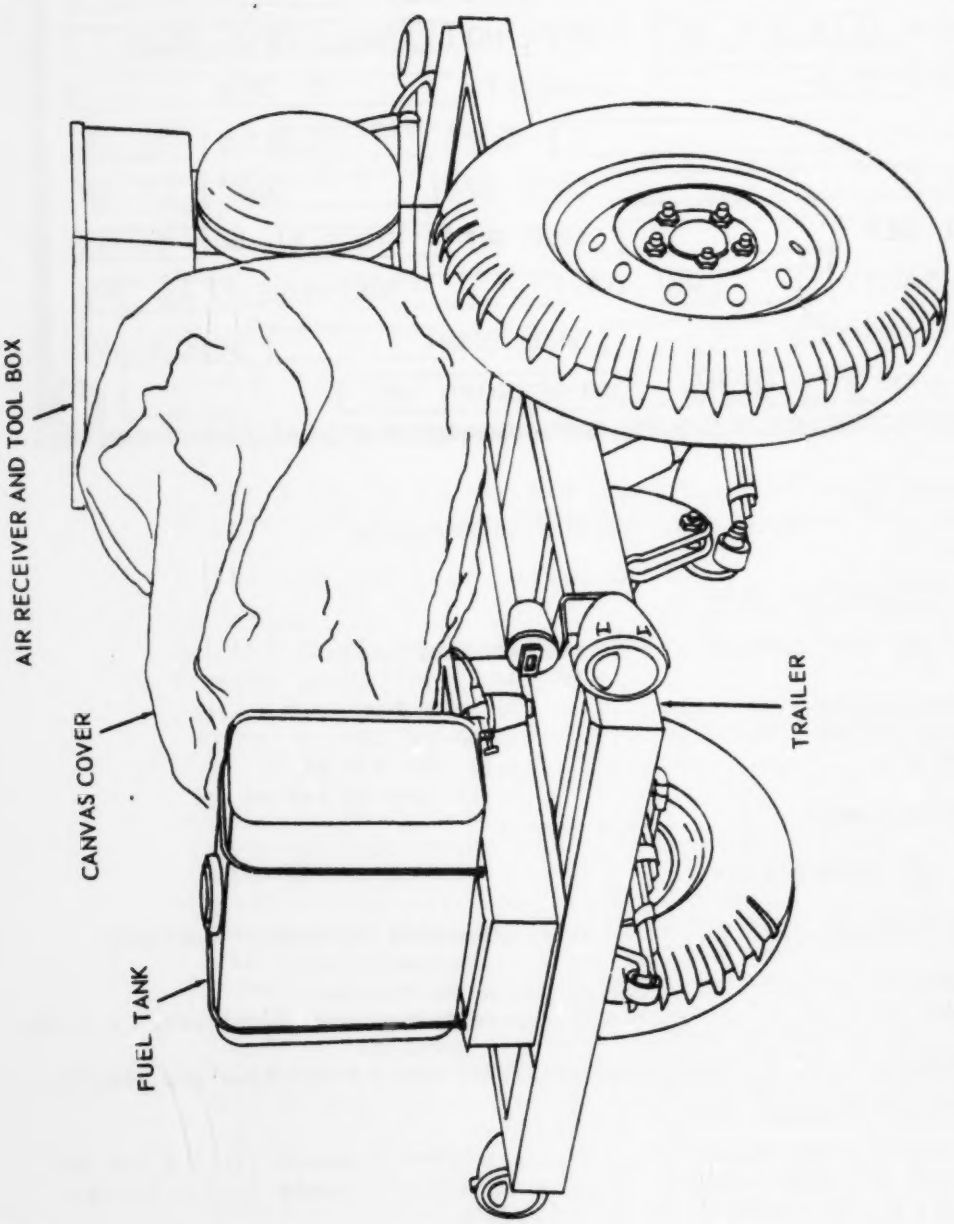


Figure 1-3. Air compressor model KAB-545-15, left rear, three quarter view with canvas cover in place.

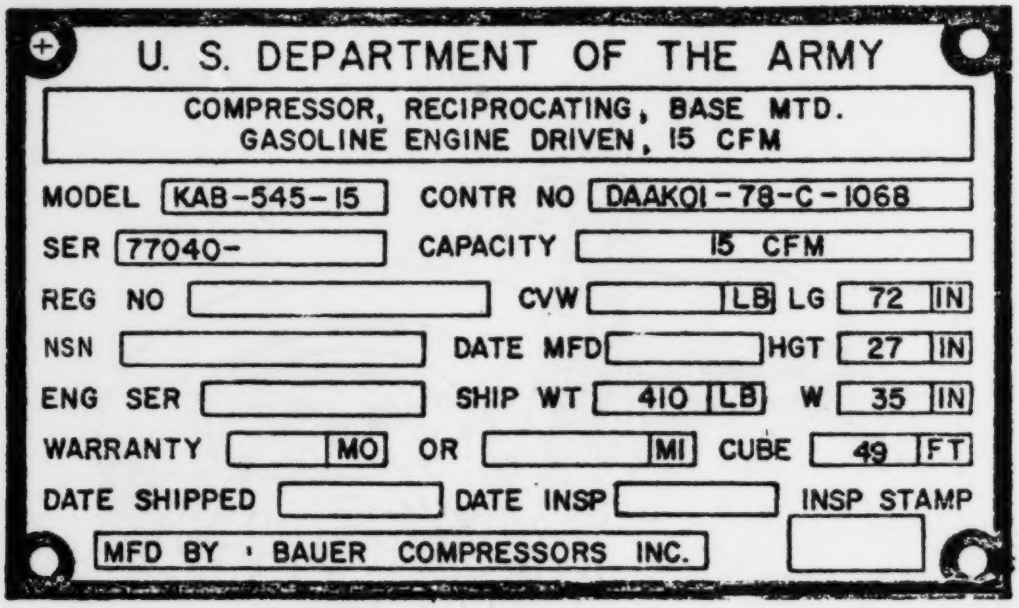


Figure 1-4. Identification plate

b. Tabulated Data

(1) Air compressor (trailer mounted).

Manufacturer.....Bauer Compressors, Inc.
Model number.....KAB-545-15
Output.....15 cfm, 175 psi
(12.3025 kg per sq cm)
Serial number.....-

(2) Compressor.

Manufacturer.....Champion Pneumatic Machinery Company, Inc.
Model.....R-15A Modified
Type.....Reciprocating, 2 cylinder, 2 stage, vertical
Speed.....735 rpm (revolutions per minute)
Bore and stroke:
Low pressure stage.....4 5/8 x 3 inches (11.7 x 7.6 cm)
High pressure stage.....2 1/2 x 3 inches (6.3 x 7.6 cm)
Air cleaner type.....dry

(3) Engine. Complete operator and maintenance data on the engine is covered in TM 5-2805-203-14.

(4) Air receiver.

Manufacturer.....Manchester
Capacity.....2.7 cubic feet (20 gallons)
Maximum temperature.....650°F (343°C)
Working pressure.....175 psi (pounds per square inch)
12.3 kg per sq cm)

(5) Capacities.

Compressor crankcase.....2 quarts (1.9 liters)
Fuel tank.....9.1 gallons (34.6 liters)
Engine oil filter.....1 pint (.47 liters)

(6) Dimensions and weights.

Shipping cube.....49 cubic feet (1.372 cubic meters)
Length.....72 inches (183 cm)
Height.....27 inches (68 cm)
Width.....35 inches (89 cm)
Weight.....410 pounds (186 kg)

(7) Trailer. Complete operator and maintenance data on the trailer is contained in TM 9-2330-251-15.

(8) Nut and bolt torque data.

Cap screws.....45 ft-lbs (6.22 kgm), max.
Cylinder flange capscrews.....45 ft-lbs, max.
Governor (centrifugal unloader) housing to crankcase capscrews.....25 ft-lbs (3.46 kgm), max.

Standard bolts and nuts where specific torque value is not listed

1/4-20.....6-9 ft-lbs (.83-1.24 kgm)
1/4-28.....6-9 ft-lbs (.83-1.24 kgm)
5/16-18.....12-18 ft-lbs (1.67-2.5 kgm)
5/16-24.....15-18 ft-lbs (2.07-2.5 kgm)
3/8-16.....23-28 ft-lbs (3.17-3.86 kgm)
3/8-24.....30-35 ft-lbs (4.14-4.83 kgm)
7/16-14.....45-50 ft-lbs (6.21-6.9 kgm)
7/16-20.....5--60 ft-lbs (6.9-8.34 kgm)
1/2-13.....60-70 ft-lbs (8.34-9.66 kgm)
1/2-20.....70-80 ft-lbs (9.66-11.04 kgm)
9/16-18.....85-95 ft-lbs (11.73-13.11 kgm)
5/8-18.....130-145 ft-lbs (17.94-20 kgm)

CHAPTER 2

OPERATING INSTRUCTIONS

SECTION I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

2-1. GENERAL

This section describes, locates, illustrates, and furnishes the operator, crew, or organizational maintenance personnel sufficient information about the various controls and instruments for proper operation of the air compressor. For engine controls and instruments refer to TM 5-2805-203-14.

2-2. CONTROLS AND INSTRUMENTS

The purpose of the controls and instruments and the normal and maximum reading of the instruments are illustrated in Figure 2-1.

SECTION II. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

WARNING

Operation of this equipment presents a noise hazard to personnel in the area. Wear ear muffs or ear plugs which were fitted by a trained professional.

WARNING

This compressor is NOT SUITABLE for the supply of air for charging cylinders with BREATHEABLE AIR.

WARNING

If equipment fails to operate, refer to troubleshooting procedures in Chapter 3.

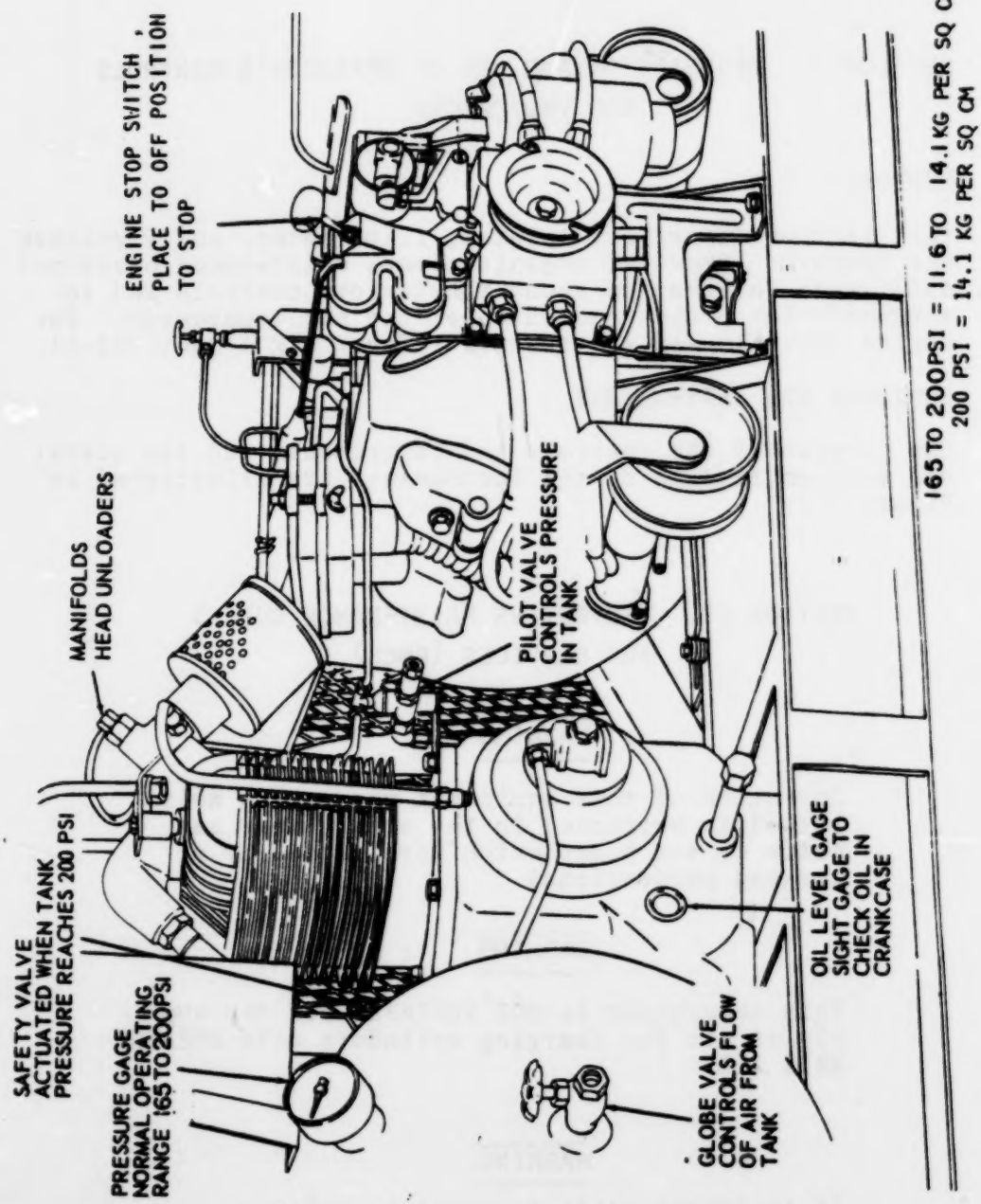

SAFETY VALVE ACTUATED WHEN TANK PRESSURE REACHES 200 PSI
PRESSURE GAGE NORMAL OPERATING RANGE 165 TO 200PSI
MANIFOLDS HEAD UNLOADERS
ENGINE STOP SWITCH, PLACE TO OFF POSITION TO STOP
PILOT VALVE CONTROLS PRESSURE IN TANK
GLOBE VALVE CONTROLS FLOW OF AIR FROM TANK
OIL LEVEL GAGE SIGHT GAGE TO CHECK OIL IN CRANKCASE
165 TO 200PSI = 11.6 TO 14.1 KG PER SQ CM
200 PSI = 14.1 KG PER SQ CM

Figure 2-1. Controls and Instruments.

2-3. GENERAL

To insure that the air compressor is ready for operation at all times, it must be inspected systematically, so that defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance checks and services to be performed are listed and described in para. 2-4. Defects discovered during operation of the unit shall be noted for future correction, to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noticed during operation which would damage the equipment if operation were continued.

2-4. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

Refer to Table 2-1 and Figure 2-2 for the preventive maintenance checks and services.

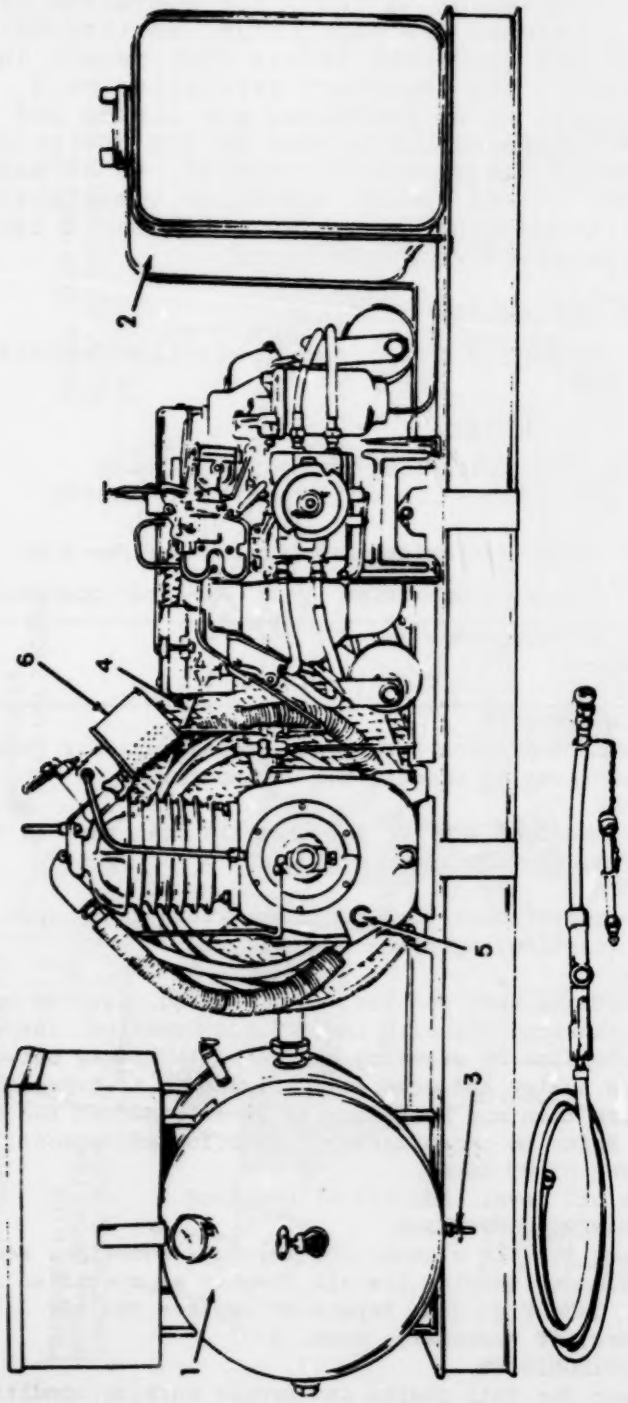
NOTE

Visually inspect for evidence of lubricant and fuel leaks concurrently with daily service checks.

Table 2-1. Operator/Crew Preventive Maintenance Checks and Services

B--Before Operation D--During Operation A--After Operation

Item No. (Fig. 2-2)	Interval and Sequence No. B	D	A	Item to be inspected Procedure
1	.		.	AIR RECEIVER TANK Drain condensation from tank. Release all air from the air receiver by opening the draincock.
2	.		.	FUEL TANK Check the fuel supply. See that the fuel tank is full. Add fuel as required.
3	.		.	DRAINCOCK Inspect draincock for leaks. Make sure it is open before starting engine.
4	.		.	V-BELTS Inspect the belt set for wear, fraying, peeling and belt tension. Visually inspect for cracking. Inspect belt tension by pressing on the belts midway between engine pulley and compressor flywheel, if depression is more than one half inch (1.27 cm), adjust the belt set. Refer to organizational PMCS for adjustment.
5	.		.	OIL LEVEL SIGHT GAGE Check oil level. Add oil if required.
6	.		.	AIR CLEANER, COMPRESSOR Inspect the air cleaner for insecure mounting, wear, and damage. Service the air cleaner as specified in para. 3-7, Fig. 3-2. Repair or replace the air cleaner, if necessary, para. 3-7.
	.		.	FIRE EXTINGUISHER Inspect for full charge and proper working condition. Ref. to paras. 3-13 to 3-15.
				NOTE: Refer to TM5-2805-203-14 for PMCS on engine.



1. Air receiver tank
2. Fuel tank
3. Draincock
4. V-belts
5. Oil level sight gage
6. Air cleaner

Figure 2-2. Preventive maintenance services.

SECTION III. OPERATION UNDER USUAL CONDITIONS

NOTE

The operator must know how to perform every operation of which the air compressor is capable. This section gives instructions on starting and stopping the air compressor, basic motions to perform the specific tasks for which the equipment is designed. Since nearly every job presents a different problem, the operator may have to vary given procedures to fit the individual job.

2-5. STARTING

a. Preparation for Starting. Perform the necessary daily preventive maintenance services, paragraph 2-4.

b. Starting. Refer to the following instructions and start the air compressor.

(1) Open draincock (Fig. 2-3).

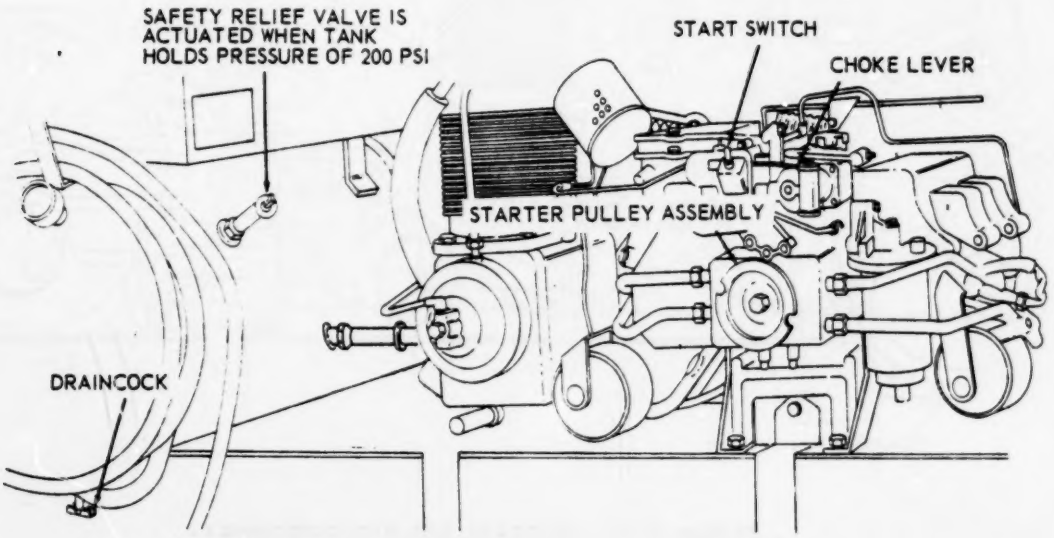
(2) Close choke lever.

(3) Turn start switch to "run."

(4) Place throttle control approximately 1/4 inch (0.635 cm) forward of full idle position.

(5) Wind starter rope clockwise around starter pulley.

(6) With a quick, steady pull, start the engine.


SAFETY RELIEF VALVE IS ACTUATED WHEN TANK HOLDS PRESSURE OF 200 PSI
START SWITCH
CHOKE LEVER
STARTER PULLEY ASSEMBLY
DRAINCOCK

200 PSI = 14.1 KG PER SQ CM

Figure 2-3. Starting the air compressor.

(7) When engine starts, gradually open choke lever.

(8) Allow engine to warm up for approximately three minutes.

(9) Move throttle to the full governed position.

(10) Close draincock.

2-6. STOPPING

a. Refer to the following instructions and stop the air compressor.

(1) Press stop button or turn ignition switch off (Fig. 2-4) until engine stops.

(2) Open draincock to blow air and condensate from tank.

(3) Close draincock.

b. Perform the necessary daily preventive maintenance services, paragraph 2-4.

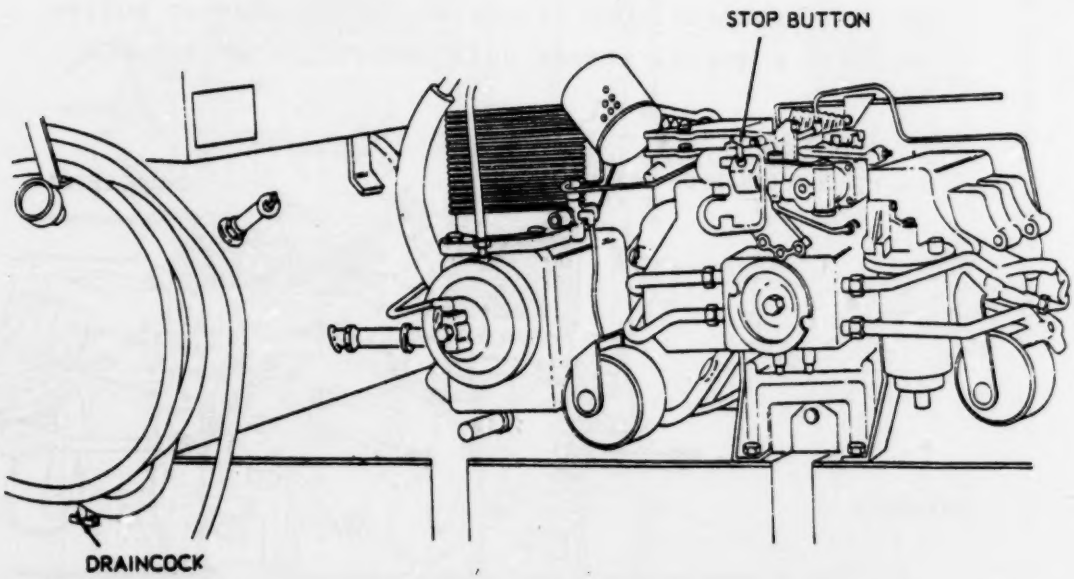


Figure 2-4. Stopping the air compressor.

2-7. OPERATION

a. Start the air compressor (para. 2-5b).

b. Refer to the following instructions and/or placard (Fig. 2-5) and operate the compressor.

(1) Check pressure gage reading--145 to 175 psi (10.2 to 12.3 kg per sq cm).

(2) Air compressor will continue to cycle as long as fuel is fed to the engine.

c. Stop the air compressor (para. 2-6).

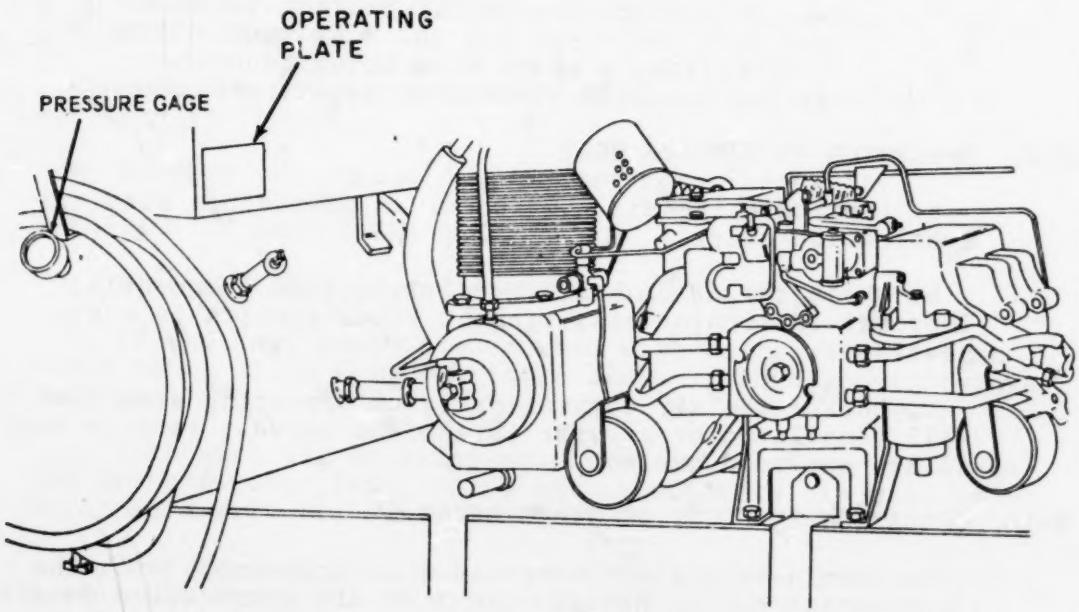


Figure 2-5. Operating the air compressor.

SECTION IV. OPERATION UNDER UNUSUAL CONDITIONS

2-8. OPERATION IN EXTREME COLD (BELOW 0°F) (-18°C).

a. Locate the air compressor in a shed or building whenever possible. If the unit is operated outdoors, protect it from prevailing winds and cover it with a tarpaulin when not in use.

b. Lubricate the air compressor according to the lubrication chart.

c. Avoid excessive handling, kinking, and sharp bending of the air hose, which will become brittle at low temperatures.

d. Keep all fuel tanks and storage containers filled with fuel to prevent formation of ice crystals from the freezing of condensation. Such crystals will clog fuel lines and carburetor jets. Use filter paper, chamois, or other type strainer when filling the tank or pouring fuel from one container to another.

WARNING

Always provide a metallic contact between the fuel container and the fuel tank. This will prevent a spark from being generated as the gasoline flows over metallic surfaces.

2-9. OPERATION IN EXTREME HEAT

a. Lubricate the air compressor in accordance with the lubrication chart.

b. Check the drive belt (V-belt) tension frequently. Improper tension or misalignment often results in overheating.

c. Locate the air compressor in an operating area that is well ventilated or provide intake and exhaust fans to ventilate enclosed areas.

2-10. OPERATION IN DUSTY OR SANDY AREAS

a. Lubricate the air compressor in accordance with the lubrication chart, making sure that all lubrication points are free from dirt and sand before applying lubricant. Keep all lubricant containers clean and tightly closed. Do not lubricate excessively as dirt and sand will adhere to excess lubricant and may work into moving parts. Wipe off all lubrication points after lubricating.

b. Protect the air compressor from dust with screens or shelter built from tarpaulins or other dustproof material. Keep the unit covered when not in use.

c. Clean the compressor air cleaner more often than when operating under normal conditions.

d. Take adequate precautions to prevent foreign matter from entering the fuel tank. Service the fuel strainer screen in the filler neck of the fuel tank as often as necessary and keep the bowl of the fuel filter assembly free of foreign matter. Clean the engine air cleaner more often than usual.

2-11. OPERATION UNDER RAINY OR HUMID CONDITIONS

a. Protect the unit with suitable shelter with adequate ventilation. Keep the sides open for ventilation when operating the unit.

b. Make sure all surfaces requiring lubrication are clean and dry before applying lubricant. Lubricate the unit in accordance with the lubrication chart.

c. Coat exposed polished or machined metal surfaces with a suitable rustproof material after first removing any accumulation of rust.

d. Open the draincock frequently to blow water from the air receiver tank.

e. Service the engine air cleaner more frequently.

2-12. OPERATION IN SALT WATER AREAS

a. Wipe the unit dry at frequent intervals.

b. If the unit becomes encrusted with salt, wash it with fresh water using a soft bristle brush if required to remove residue.

c. Make sure all surfaces requiring lubrication are clean and dry before applying lubricant. Lubricate the unit in accordance with the lubrication chart.

d. Coat exposed polished or machined metal surfaces with a suitable rustproof material after first removing any accumulation of rust.

2-13. OPERATION AT HIGH ALTITUDES

a. The air compressor is designed to operate efficiently at elevations up to 5,000 feet. There will be a reduction in efficiency because of the rarefied air at this level. This is a normal unpreventable condition.

b. Do not operate the unit in small confined or enclosed areas that do not have ample air circulation or ventilation.

c. Fill the fuel tank at the end of each day's operation to prevent condensation of moisture in the fuel tank.

d. Adjust the engine carburetor to compensate for the reduced amount of oxygen available to the carburetor.

CHAPTER 3

OPERATOR'S MAINTENANCE INSTRUCTIONS

SECTION I. LUBRICATION INSTRUCTIONS

3-1. GENERAL LUBRICATION INFORMATION

a. This section contains lubrication instructions which are supplemental to, and not specifically covered in the lubrication order.

b. For the current lubrication chart refer to Figure 3-1.

3-2. DETAILED LUBRICATION INFORMATION

a. General. Keep all lubricants in closed containers and store in a clean, dry place away from external heat. Do not allow dust, dirt, or other foreign material to mix with the lubricants. Keep all lubrication equipment clean and ready to use.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

b. Cleaning. Keep all external parts not requiring lubrication clean of lubricants, using cleaning solvent, Federal Specification P-D-680, and dry thoroughly. Before lubricating the equipment, wipe all lubrication points free of dirt and grease. Clean all lubrication points after lubricating to prevent accumulation of foreign mater.

c. Points of Lubrication. Service the lubrication points at proper intervals as illustrated in Figure 3-1.

d. OES Oil.

(1) Crankcase oil level must be checked frequently, as oil consumption may increase.

(2) Oil may require changing more frequently than usual because contamination by dilution and sludge formation will increase under cold weather operation conditions.

e. Engine Lubrication. Refer to LO 5-2805-203-12 for detailed engine lubrication.

f. Trailer Lubrication. Refer to LO 9-2330-251-14 for detailed trailer lubrication.

COMPRESSOR, RECIPROCATING, AIR, 15 CFM, 175 PSI,

TRAILER MOUNTED, GED. BAUER

MODEL KAB-545-15

Intervals are based on normal hours of operation. Adjust to compensate for abnormal operation and severe conditions. During inactive periods, sufficient lubrication must be performed for adequate preservation.

Relubricate after washing.

Clean parts with SOLVENT, dry-cleaning. Dry before lubricating.

Drain crankcase when hot. Fill and check level.

LUBRICANT.	INTERVAL
Compressor Crankcase Fill Plug (See Key.)	OE
Compressor Oil Level Sight Gage (Check Level.)	10
Compressor Drain Cap (Drain and Refill.)	500

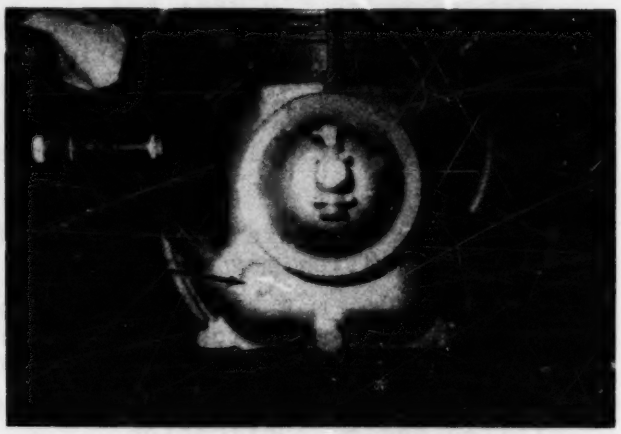


Figure 3-1. Lubfication chart (sheet 1 of 2).

-KEY-

LUBRICANTS	CAPACITY	EXPECTED TEMPERATURES			INTERVALS
		Above +32°F	+40°F to -10°F	0°F to -65°F	
OE-OIL, Engine, Heavy Duty					
Compressor Crankcases	2 qt	OE 30	OE 10	OES	Intervals given are in hours of normal operation
OES-OIL, Engine, Sub-zero					

NOTES:

1. FOR OPERATION OF EQUIPMENT IN PROTRACTED COLD TEMPERATURES BELOW--10°F. Remove lubricants prescribed in the key for temperatures above--10°F. Relubricate with lubricants specified in the key for temperatures below--10°F.

2. LUBRICANTS. The following is a list of lubricants with the Military Symbols and applicable specification numbers.

   OE MIL-L-2104
   OES MIL-L-10295

Figure 3-1. Lubrication chart (sheet 2 of 2).

SECTION II. TROUBLESHOOTING

3-3. GENERAL

a. This section contains troubleshooting information for locating and correcting most of the operating troubles which may develop in the air compressor. Each malfunction for an individual component, unit, or system is followed by a list of tests or inspections which will help to determine probable causes and corrective action to be taken. Perform the tests/inspections and corrective actions in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all tests or inspections, and corrective action. If a malfunction is not listed or is not corrected by corrective actions, notify your supervisor.

3-4. OPERATOR MAINTENANCE TROUBLESHOOTING

Refer to Table 3-1 for troubleshooting pertaining to operator's maintenance.

Table 3-1. Troubleshooting

Malfunction Test or Inspection Corrective Action
1. ENGINE FAILS TO START
Refer to TM 5-2805-203-14 for troubleshooting procedures.
2. ENGINE STOPS
Refer to TM 5-2805-203-14 for troubleshooting procedures.
3. COMPRESSOR OVERHEATS
Step 1. Inspect air cleaner for clogging.
Clean air cleaner by washing parts in soapy water, rinse and dry thoroughly.
Step 2. Inspect baffles for an accumulation of dirt or dust.
Clean baffles with dry compressed air.
Step 3. Check crankcase oil level.
Add oil in accordance with lubrication chart, Figure 3-1.
4. COMPRESSOR PUMPS TOO SLOWLY
Step 1. Inspect the belt set for wear, fraying, or peeling. Inspect belt tension by pressing on the belts midway between engine pulley and compressor flywheel.
If depression is more than one half inch (1.27 cm), refer to organizational maintenance for adjustment. If belts are damaged, refer to organizational maintenance for replacement.
Step 2. Inspect air cleaner for clogging.
Clean air cleaner by washing parts in soapy water, rinse and dry thoroughly.
Step 3. Check oil level.
Add oil to crankcase, refer to Figure 3-1.
5. COMPRESSOR FAILS TO BUILD UP PRESSURE
Inspect air cleaner for clogging.
Clean air cleaner by washing parts in soapy water, rinse and dry thoroughly.

Table 3-1. Troubleshooting (cont'd)

Malfunction Test or Inspection	Corrective Action
6. COMPRESSOR NOISY Check oil level.	Add oil to crankcase, refer to Figure 3-1.
7. V-BELTS WORN EXCESSIVELY Inspect the belt set for wear, fraying, or peeling. Inspect belt tension by pressing on the belts midway between engine pulley and compressor flywheel.	If depression is more than one half inch (1.27 cm), refer to organizational maintenance for adjustment. If belts are damaged, refer to organizational maintenance for replacement.

SECTION III. MAINTENANCE PROCEDURES

3-5. GENERAL

The instructions in this section are published for information and guidance of the operator to maintain the air compressor.

CAUTION

Never attempt to service any of the air compressor components until the engine is stopped and the unit is relieved of all air pressure.

3-6. V-BELTS

a. Inspection.

(1) Inspect belts for fraying, cracks, and wear.

(2) Inspect for proper adjustment.

b. Adjustment and Replacement. Refer to organizational maintenance for removal and adjustment.

3-7. COMPRESSOR AIR CLEANER

a. Disassembly.

(1) Remove the setscrew (11, Fig. 4-9) securing the air cleaner to the manifold and remove the air

cleaner (Fig. 3-2).

(2) Remove the bolt (1) and nut (2) and separate the clam shell housing (4).

(3) Remove the elements (3).

b. Cleaning, Inspection and Repair.

(1) Wash all parts in soapy water, rinse and dry thoroughly.

(2) Inspect for damaged parts and replace as necessary.

c. Assembly.

(1) Reinstall elements (3) in clam shell housing (4) half.

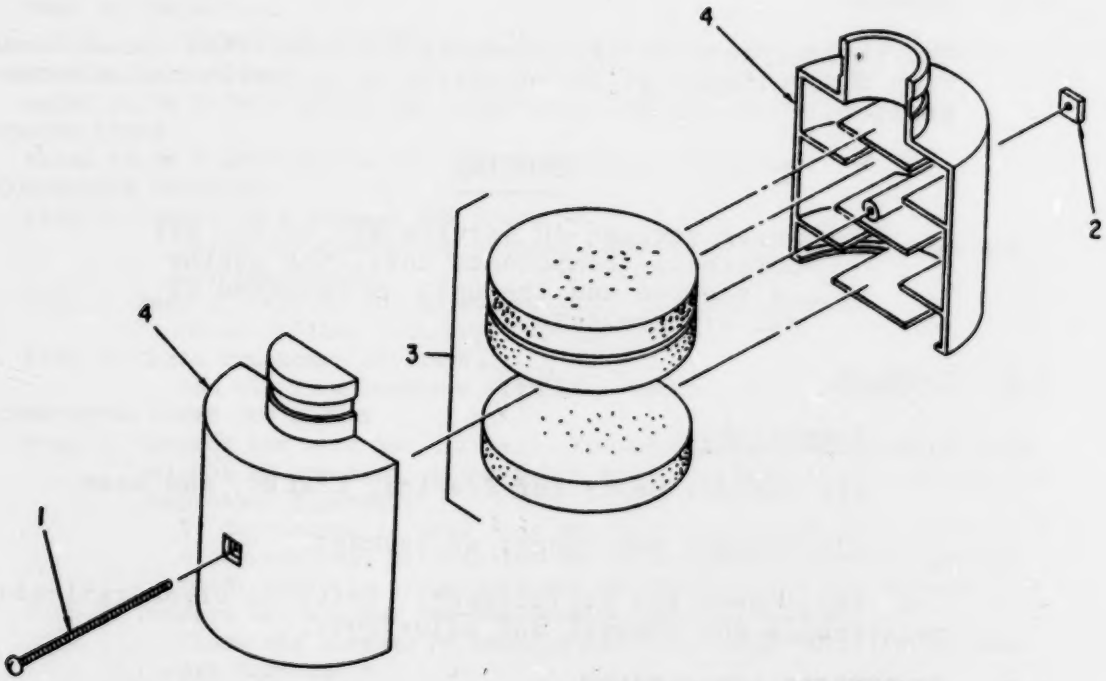
(2) Secure elements with bolt (1) and nut (2).

(3) Install air cleaner to inlet manifold with setscrew.

3-8. COMPRESSOR OIL FILLER PLUG

a. Removal.

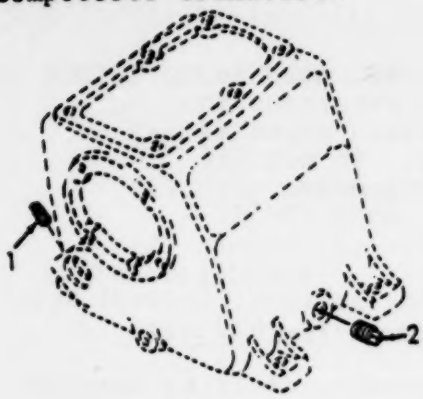
(1) Stop the engine.



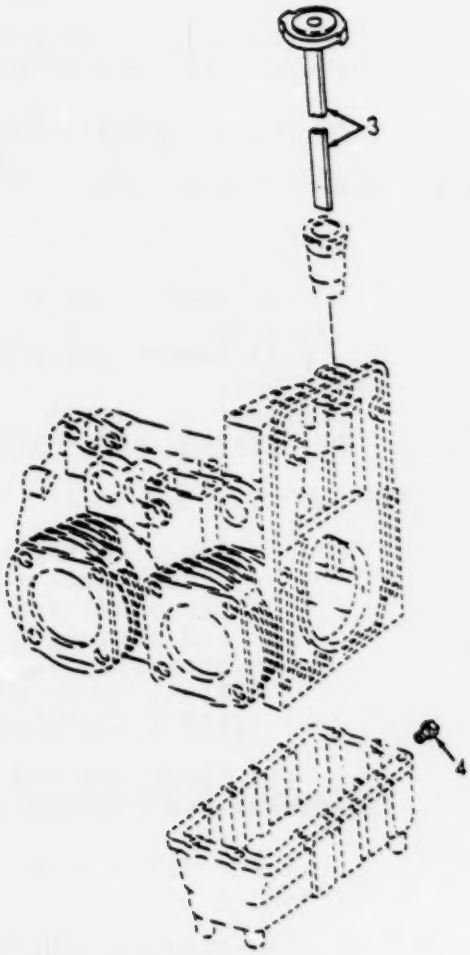
1. Bolt
2. Nut
3. Elements
4. Housing

Figure 3-2. Compressor air cleaner, exploded view.

(2) Remove the oil filler plug (1, Fig. 3-3) from the compressor crankcase.



A. Compressor Crankcase Plugs



B. Engine Plugs

1. Plug
2. Plug
3. Filler cap
4. Plug

Figure 3-3. Oil filler and drain plugs, removal and installation.

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean the plug with cleaning solvent, Federal Specification P-D-680, and dry the plug thoroughly.

(2) Inspect plug for cracks, breaks, dents or damaged threads. Replace if defective.

c. Installation. Install the oil filler plug (1, Fig. 3-3).

3-9. COMPRESSOR OIL DRAIN PLUG

a. Removal.

(1) Remove the oil filler plug (1, Fig. 3-3).

(2) Remove the oil drain plug (2). Drain oil from crankcase.

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean removed parts in cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect plug for cracks, breaks, dents or damaged threads.

(3) Replace plug if defective.

c. Installation.

(1) Install the oil drain plug (2, Fig. 3-3) in the compressor crankcase.

(2) Fill the compressor crankcase in accordance with the lubrication chart Figure 3-1.

(3) Install the oil filler plug (1, Fig. 3-3).

3-10. ENGINE OIL FILLER CAP

a. Removal.

(1) Stop the engine.

(2) Remove the oil filler cap (3, Fig. 3-3) from the engine crankcase.

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean the cap with cleaning solvent. Federal Specification P-D-680, and dry thoroughly.

(2) Inspect for cracks, breaks, dents, or damaged threads. Replace if defective.

c. Installation. Install the oil filler cap (3, Fig. 3-3).

3-11. ENGINE OIL DRAIN PLUG

a. Removal.

(1) Remove the engine oil filler cap (3, Fig. 3-3).

(2) Remove the engine oil drain plug (4, Fig. 3-3). Drain oil from crankcase.

(3) Remove engine oil filter assembly as described in engine technical manual TM5-2805-203-14.

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C)

(1) Clean all parts in cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect the oil drain plug for cracks, breaks, dents, or damaged threads. Replace defective parts.

c. Installation.

(1) Install the oil drain plug (4, Fig. 3-3) in the engine crankcase.

(2) Fill the engine crankcase in accordance with the lubrication order. Refer to LO 5-2805-203-12.

(3) Install the engine oil filler cap (3, Fig. 3-3).

(4) Install engine oil filter assembly as described in engine technical manual TM5-2805-203-14.

3-12. AIR RECEIVER

a. Inspection. Inspect for cracks, breaks, and other damage.

b. Replacement. Refer to organizational maintenance for removal and replacement.

3-13. FUEL TANK ASSEMBLY

a. Inspection. Inspect all parts for cracks, breaks, dents, or other damage. Inspect the tank for corrosion, evidence of leaks, or other damage.

b. Repair or Replacement. Refer to organizational maintenance.

3-14. LINES, FITTINGS AND TUBING

a. Inspection. Inspect all lines, fittings and tubing for leaks, cracks or crimps. Tighten all connections securely.

b. Replacement. Refer to organizational maintenance.

3-15. FUEL FILTER

a. Inspection and Cleaning. Inspect fuel filter bowl for cracks and fuel strainer screen for cleanliness. Blow out the fuel strainer screen with compressed air or wash thoroughly so that screen is free of all contamination and foreign matter. Clean filter bowl.

b. Replacement. Refer to organizational maintenance.

3-16. THROTTLE CONTROL LINKAGE

a. Inspection. Inspect all parts for cracks, breaks, dents and other damage. Inspect tubing for crimps and cracks.

b. Replacement. Refer to organizational maintenance.

3-17. EXHAUST SYSTEM

a. Inspection. Inspect mufflers and attaching parts for cracks, breaks, damaged threads or other defects.

b. Replacement. Refer to organizational maintenance.

3-18. BELT GUARD ASSEMBLY

a. Inspection. Inspect the belt guard and mounting brackets for dents, cracks, breaks or other damage. Inspect all attaching hardware for damaged threads.

b. Repair or Replacement. Straighten minor dents and bends in the buard or brackets. Refer other repair or replacements to organizational maintenance.

3-19. DRIVE PULLEY

a. Inspection. Inspect the drive pulley for cracks, chips, and other damage, particularly in V-groove, where excessive wear to the V-belts could occur. Inspect all other parts, including threads, for damage or wear.

b. Replacement. Refer to organizational maintenance.

3-20. AIR DISCHARGE HOSE

a. Inspection. Inspect air discharge hose for leaks or cracks.

b. Replacement. Replace defective air discharge hose.

3-21. INFLATOR GAGE

a. Inspection. Inspect inflator gage for cracks, dents, breaks or other damage.

b. Replacement. Refer to organizational maintenance.

CHAPTER 4

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

SECTION I. SERVICE UPON RECEIPT OF MATERIEL

4-1. INSPECTING AND SERVICING EQUIPMENT

a. In the event the equipment is received via carrier proceed with unloading the equipment as follows:

(1) Remove all tie-downs or blocking that secure the trailer mounted air compressor to the carrier. Refer to Figure 4-1.

WARNING

Make certain any lifting device used has a capacity equal to the weight being lifted. Failure to observe this precaution could result in injury or death to personnel and damage to the equipment.

(2) The trailer mounted air compressor may be towed off the carrier if a suitable ramp is provided, or lifted off with a hoist or crane by attaching suitable slings to the lifting eyes on the trailer.

b. If some units and components are packaged or crated, proceed as follows to remove packaging or crate, whichever applies.

(1) Remove top of crate. Remove bolts attaching skid to crate.

(2) Lift out compressor by attaching suitable sling to lifting eye.

(3) Place the air compressor assembly as close to the point where it is to be used as possible and remove the canvas protective cover.

(4) Remove the box containing the air hose assembly, inflator gage, canvas cover and starter rope. These are

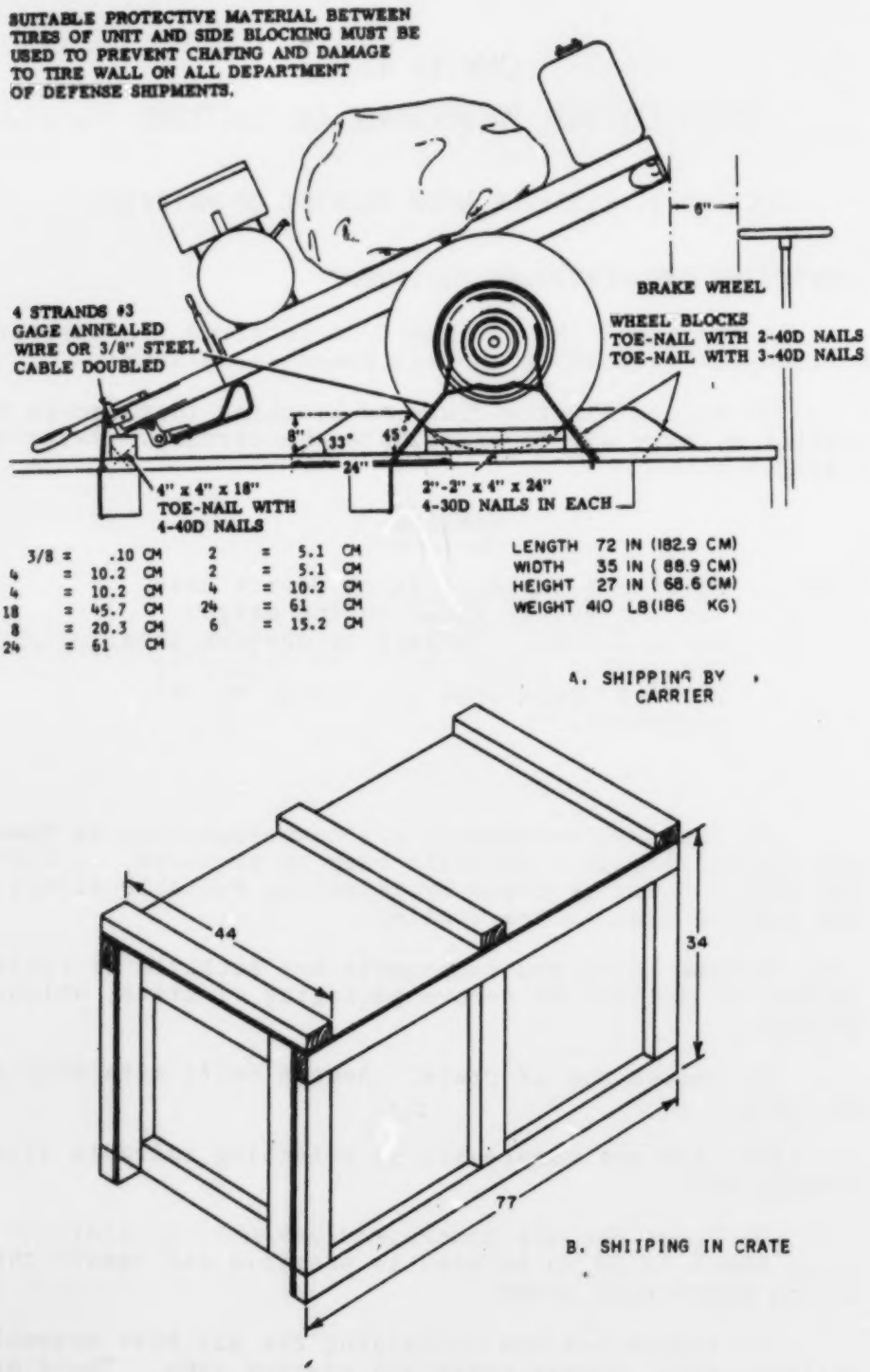

SUITABLE PROTECTIVE MATERIAL BETWEEN TIRES OF UNIT AND SIDE BLOCKING MUST BE USED TO PREVENT CHAFING AND DAMAGE TO TIRE WALL ON ALL DEPARTMENT OF DEFENSE SHIPMENTS.
4 STRANDS #3 GAGE ANNEALED WIRE OR 3/8" STEEL CABLE DOUBLED
6"
BRAKE WHEEL
WHEEL BLOCKS TOE-NAIL WITH 2-40D NAILS TOE-NAIL WITH 3-40D NAILS
8"
33°
45°
24"
4" x 4" x 18" TOE-NAIL WITH 4-40D NAILS
2"-2" x 4" x 24" 4-30D NAILS IN EACH
3/8 = .10 CM
4 = 10.2 CM
4 = 10.2 CM
18 = 45.7 CM
8 = 20.3 CM
24 = 61 CM
2 = 5.1 CM
2 = 5.1 CM
4 = 10.2 CM
24 = 61 CM
6 = 15.2 CM
LENGTH 72 IN (182.9 CM)
WIDTH 35 IN (88.9 CM)
HEIGHT 27 IN (68.6 CM)
WEIGHT 410 LB(186 KG)
A. SHIPPING BY CARRIER
44
34
77
B. SHIIPING IN CRATE

Figure 4-1. Shipping and tie-down instructions.

shown in Figure 4-2. Remove the cloth sack containing the tool box padlock keys. The sack is tied to the engine.

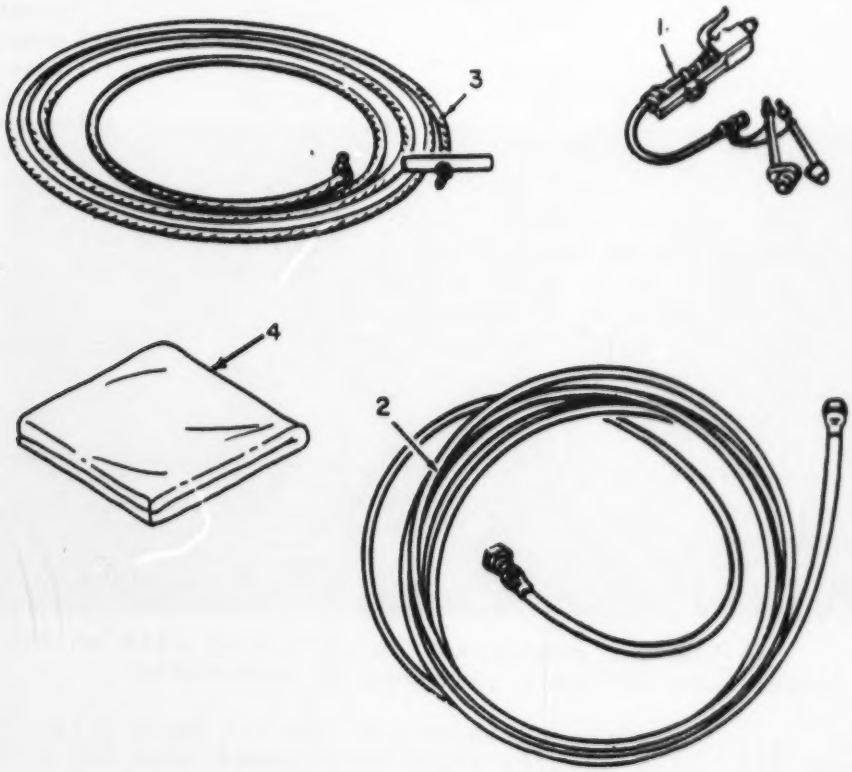
c. Make a complete visual inspection of the air compressor for any loss or damage that may have occurred during shipment. Prior to inspection or operation of the air compressor, accomplish depreservation of the equipment as outline in DA Form 2258.

d. Perform the preventive maintenance services, Table 4-2.

e. Inspect the air compressor for oil leaks, loose mounting bolts or nuts, cracks, breaks, dented or pinched tubing, and other defects.

f. Inspect the spark plugs and cables. See that the carburetor is securely mounted and that the fuel lines are secure and are not cracked, broken, or crimped. Check that the glass bowl on the fuel filter is secure and not cracked or broken.

g. Correct all deficiencies or report them to the proper authority.



1. Inflator gage
2. Hose assembly
3. Starter rope
4. Canvas cover

Figure 4-2. Separately packed components.

WARNING

Do not fill the fuel tank while the engine is running. Be sure there are no open flames that may ignite the fuel vapors while the tank is being filled. Always provide a metal-to-metal contact between the container and tank to prevent a spark from being generated as gasoline flows over the metallic surfaces.

h. The maintenance and operating supplies required for the initial eight hours of operation for the compressor are contained in Table 4-1.

Table 4-1. Maintenance and Operating Supplies.

(1) Component application	(2) National stock number	(3) Description	(4) Quantity required for initial operation	(5) Quantity required for hrs operation	(6) Notes
Crankcase (1)		Lubricating Oil:			(1) Includes quantity to fill compressor crankcase as follows: 2 qt--crankcase (2) See Fig. 3-1 for application and intervals.
		OE-30	2 qt (2) (2 liters)		
		OE-10	2 qt (2)		
		OES	2 qt (2)		
Fuel Tank (4)	9130-00-160-1816	Fuel, Gasoline: Bulk, automotive	9.2 gal (35 liters) (3)	6.4 gal (24 liters)	(3) Tank capacity. (4) Average fuel consumption is .8 gal (3 liters) per hour.

4-2. INSTALLATION

a. Installation of Separately Packed Components.

(1) The air compressor is delivered with an air hose assembly and inflator gage packed separately.

(2) Screw the union nut on the air hose (Fig. 4-3) onto the union adapter which is screwed into the globe valve.

(3) Screw inflator gage onto air hose.

b. Installation or Setting Up Instructions.

(1) General. The equipment is primarily designed for mobile field use and requires no special base.

(2) Location. If possible avoid muddy, sandy, or dusty location as a site for installation as dirt and moisture shorten the life of all moving parts.

(3) Leveling. The air compressor should be as level as possible when installed or set up for use. Do not operate at more than a 10° angle or engine damage will result.

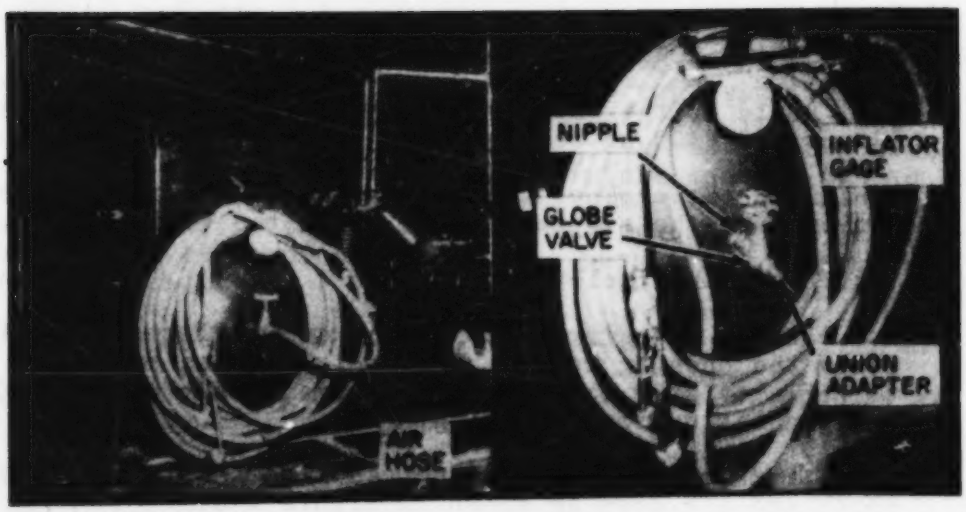


Figure 4-3. Air hose assembly and inflator gage, installed (left) and removed (right).

WARNING

When operating in an enclosed area, pipe exhaust gases to the outside by extending exhaust pipe. The exhaust gases contain carbon monoxide, a colorless and odorless poisonous gas. Inhalation of exhaust fumes will result in serious illness or death.

(4) Installation. If the compressor is to be installed within a building or vehicle, pipe the exhaust to the outside. Use as few bends as possible in the exhaust line and make sure all connections are tight.

WARNING

Noise Hazard Equipment Hearing Protection Required.

(5) Noise Hazard Warning Signs. Signs conforming to provisions of AR 385-30 will be erected in the area to provide notification of NOISE HAZARD in accordance with TB MED-251. The signs should read as above.

SECTION II. MOVEMENT TO A NEW WORK SITE

4-3. DISMANTLING FOR MOVEMENT

a. Build up the pressure in the air receiver to just below 140 psi (9.8420 kg per sq cm).

b. Stop the engine. Open the draincock and blow the condensation from the air receiver. Close the draincock.

c. Drain the fuel tank.

d. Remove the air hose assembly and inflator gage (Fig. 4-3) Cover the opening to the air receiver, hose ends, and opening to inflator gage with suitable plugs, caps, or tape to prevent foreign matter from entering.

e. Lift or tow the air compressor on a suitable carrier. Block and tie down as shown in Figure 4-1.

f. Move the air compressor to the new work site. Unload it and set it up for operation.

4-4. REINSTALLATION AFTER MOVEMENT

Install the air compressor by following the instructions in paragraph 4-2.

SECTION III. REPAIR PARTS, SPECIAL TOOLS AND EQUIPMENT

4-5. SPECIAL TOOLS AND EQUIPMENT

No special tools or equipment are required by organizational maintenance personnel for the maintenance of the air compressor.

4-6. MAINTENANCE REPAIR PARTS

Repair parts and equipment are listed and illustrated in TM5-4310-363-14-24P.

SECTION IV. PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

4-7. GENERAL

To insure that the air compressor is ready for operation at all times, it must be inspected systematically, so that defects may be discovered and corrected before they result in serious damage or failure. The necessary preventive maintenance checks and services to be performed are listed and described in paragraph 4-8. Defects discovered during operation of the unit shall be noted for future correction, to be made as soon as operation has ceased. Stop operation immediately if a deficiency is noticed during operation which would damage the equipment or injure personnel if operation were continued.

4-8. PREVENTIVE MAINTENANCE CHECKS AND SERVICES

Refer to Table 4-2 for the preventive maintenance checks and services.

NOTE

Visually inspect for evidence of lubricant and fuel leaks concurrently with service checks.

Table 4-2. Organizational Preventive Maintenance Checks and Services

B--Before D--During A--After

Item	Internal B	Internal D	Internal A	Item to be inspected procedure
1				LUBRICATION Inspect the unit(s) for missing or damaged lubrication fittings and for signs of insufficient lubrication. Check deficiencies noticed.
2				APPEARANCE Inspect the general appearance of the unit, paying particular attention to cleanliness, legibility of identification markings, and the condition of the paint. Correct the deficiencies noticed or report the deficiency to the proper authority.
3				ENGINE Refer to TM 5-2805-203-14 for preventive maintenance checks and services to be performed on the MIL-STD-ENG Model 4A032-11.
4	.	.		FUEL TANK Inspect the fuel tank for signs of leaks and loose mounting. Tighten fuel tank mounting straps (para. 4-12), if necessary. Repair or replace a defective fuel tank, para. 4-12.
5	.	.		AIR RECEIVER TANK Inspect the air receiver tank for cracked, or broken welds, dents, and other damage. Tighten all leaky fittings. Replace a damaged air receiver tank, paragraph 4-35.
6		.		UNLOADER Inspect the centrifugal unloader and the unloader valve for leaks and improper operation. Repair a defective centrifugal unloader, paragraph 4-28.
7		.		INTERCOOLER Inspect the intercooler tube for loose and leaking connections, bends, breaks, and dirt. Tighten loose connections and clean with a brush and compressed air. Replace the intercooler tube if defective, paragraph 4-23.
8		.		VALVE, COMPRESSOR Inspect the valves for the following: A leak in the low pressure intake valve is indicated by a hissing noise in the air cleaner. A constant blowing of low pressure safety valve indicates a leak in the high pressure valve. If necessary remove the valves and clean thoroughly, para. 4-27. Replace all damaged or won parts, paragraph 4-27.
9	.	.		PRESSURE GAGE Inspect pressure gage for loose mounting or leaks. Observe the pressure gage for an indication of pressure being delivered to the air receiver tank. Normal operating pressure is 140 to 175 psi (9,8 to 12.3 kg per sq cm). Replace if defective, paragraph 4-31.

Table 4-2. Organizational Preventive Maintenance Checks and Services (cont'd)

B--Before D--During A--After

Item	Internal B	D	A	Item to be inspected procedure
10	.			SAFETY RELIEF VALVE Inspect safety relief valve for cracks and loose mounting. Replace if defective, paragraph 4-30.
11	.			GLOBE VALVE Inspect globe valve for leaks and loose mounting. Replace if defective, paragraph 4-32.
12	.			PILOT VALVE Inspect pilot valve for cracks or loose mounting. Replace if defective, paragraph 4-25.
13	.			OIL LEVEL SIGHT GAGE Inspect oil sight indicator for cracks, or breaks. Replace if defective, paragraph 4-33.
14	.	.		BELT GUARD Inspect the belt guard for loose mounting, and missing hardware. Tighten or replace any loose or missing hardware, paragraph 4-18. Replace the belt guard if defective, paragraph 4-18.
15	.	.		FLYWHEEL, COMPRESSOR Inspect the flywheel for cracks and breaks. Inspect for accumulated dirt or debris that might restrict the flow of air. If flywheel is cracked or broken, replace it. Refer to paragraph 4-22.
16	.	.	.	V-BELTS Inspect the belt set for wear, fraying or peeling. Inspect belt tension by pressing on the belts midway between engine pulley and compressor flywheel. If depression is more than one half inch (1.27 cm), adjust the belt set. Refer to paragraph 4-19 for adjustment. If belts are damaged, replace them. Refer to paragraph 4-19 for replacement instructions.
17	.			CHECK VALVE Inspect the check valve for loose mounting or leaks. Replace if defective. Refer to Fig. 4-19.
18	.			TUBE ASSEMBLY, AIR HOSE AND CONNECTIONS Inspect the hose assembly for leaks and cracks. Inspect all tubes for loose connections. Tighten all connections securely. Replace defective tubes, paragraph 4-23.
19	.			TRAILER Refer to TM9-2330-251-14.

SECTION V. TROUBLESHOOTING

4-9. GENERAL

a. This section contains troubleshooting information for locating and correcting most of the operating troubles which may develop in the air compressor unit(s). Each malfunction for an individual component, unit, or system is followed by a list of tests or inspections which will help to determine probable causes and corrective action to be taken. Perform the tests/inspections and corrective action in the order listed.

b. This manual cannot list all malfunctions that may occur, nor all tests or inspections and corrective actions. If a malfunction is not listed or is not corrected by listed corrective action, see your supervisor.

4-10. ORGANIZATIONAL MAINTENANCE TROUBLESHOOTING

Refer to Table 4-3 for troubleshooting pertaining to organizational maintenance.

Table 4-3. Troubleshooting

Malfunction Test or Inspection Corrective Action
1. ENGINE MALFUNCTIONS Refer to TM 5-2805-203-14 for troubleshooting procedures.
2. COMPRESSOR OVERHEATS
Step 1. Inspect belt tension by pressing on the belts midway between engine pulley and compressor flywheel. If depression is more than one half inch (1.27 cm), adjust the belt set as follows: a. Stop engine, and release the air from the compressor by opening the draincock. b. Remove nut (Fig. 4-4), lockwasher, washer and screw, remove bracket. c. Remove guard. Loosen engine attaching hardware (Fig. 4-5). It is not necessary to remove the attaching hardware parts. d. Move the engine away from the compressor until there is tension on the V-belts. Depress belts until one half inch (1.27 cm) depression is obtained. e. Tighten the engine mounting hardware. Be extremely careful that the engine is square in relation to the mounting base and flywheel to avoid binding and excessive wear of the V-belts. f. Install the belt guard.
Step 2. Inspect aftercooler tube and check valve for carbon and wear. Replace a damaged tube, para. 4-23. Replace a damaged check valve, Fig. 4-19.

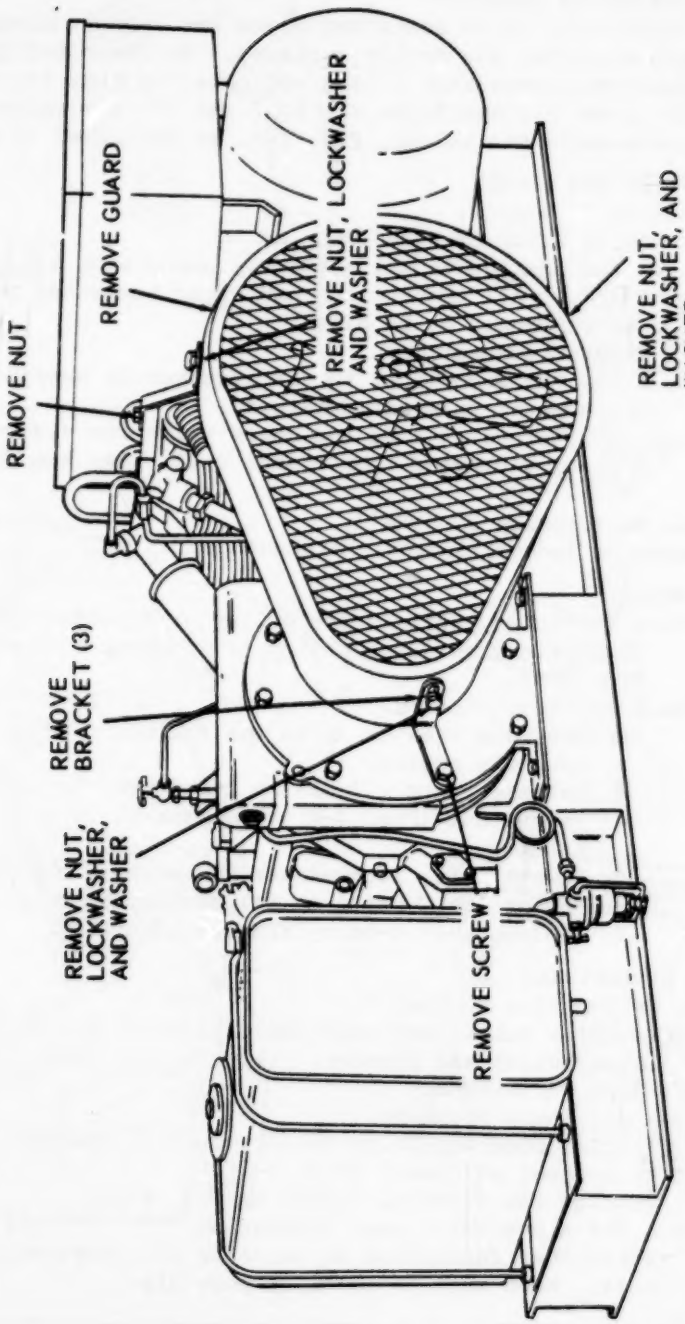
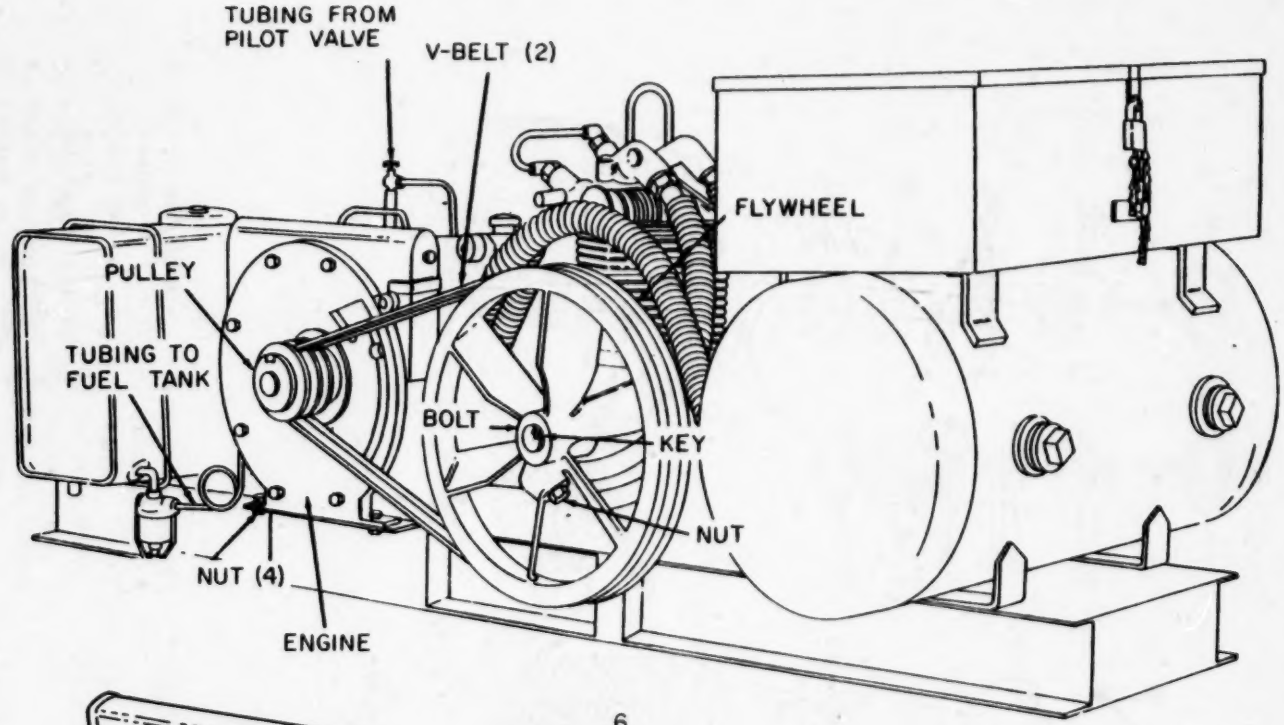
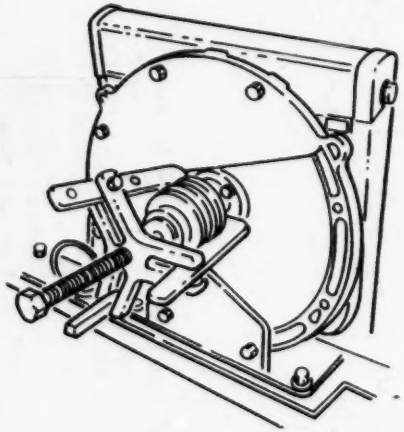


Figure 4-4. Belt guard, removal and installation.

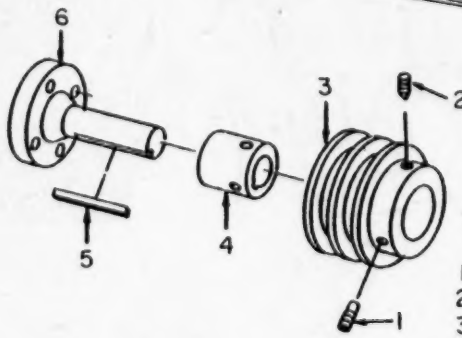
Table 4-3. Troubleshooting (cont'd)

Malfunction Test or Inspection Corrective Action
2. COMPRESSOR OVERHEATS (cont'd)
Step 3. Inspect all valve seats and cages for cracks, breaks, rough or scored seats, and mating surfaces. To check for damaged valves, disconnect necessary tubing and refer to Fig. 4-6 and remove bolts (1, 6 and 9), manifolds (2, 3, 7 and 10) and valves (4, 5, 8 and 11). Disassemble the valves, Fig. 4-7, as described in para. 4-27.
3. COMPRESSOR PUMPS TOO SLOWLY
See Malfunction 2, Step 1.
4. COMPRESSOR FAILS TO BUILD UP PRESSURE
Step 1. Check for leakage in the system by using soap solution to check for for leaks at all connections and other suspected points. Leakage will be evidenced by bubbles. Tighten connections.
Step 2. Check for too much water in air receiver by opening the draincock. Drain water from air receiver.
Step 3. Inspect aftercooler tube and check valve for carbon and wear. Replace a damaged tube, para. 4-23. Replace damaged check valve (Fig. 4-19).
Step 4. See Malfunction 2, Step 3.
Step 5. Refer to General Support Maintenance.
5. COMPRESSOR NOISY
Step 1. Check for loose engine drive pulley or flywheel (Fig. 4-5). Tighten engine drive pulley or compressor flywheel (refer to Fig. 4-5).
Step 2. Check for worn V-belts. Replace worn V-belts using the following procedure: a. Stop the engine. b. Release the air from the compressor by opening the draincock. c. Remove nut (Fig. 4-4), lockwashers, washer and screw, remove bracket. d. Remove nuts, lockwashers and washers and remove guard. e. Remove the V-belts as illustrated in Fig. 4-5. f. Replace worn V-belts and install guard.
6. V-BELTS WORN EXCESSIVELY
Step 1. See Malfunction 2, Step 1.
Step 2. Check engine pulley and compressor flywheel for misalignment. Align pulley and flywheel (refer to Fig. 4-5).
7. COMPRESSOR VIBRATES EXCESSIVELY
Step 1. Check for loose mounting. Tighten mounting bolts and/or mounting plates.
Step 2. Check flywheel alignment (Fig. 4-5). Realign the flywheel (refer to Fig. 4-5).
Step 3. Check for a possible loose foundation. Strengthen foundation or relocate air compressor on a solid base. Keep unit as level as possible.



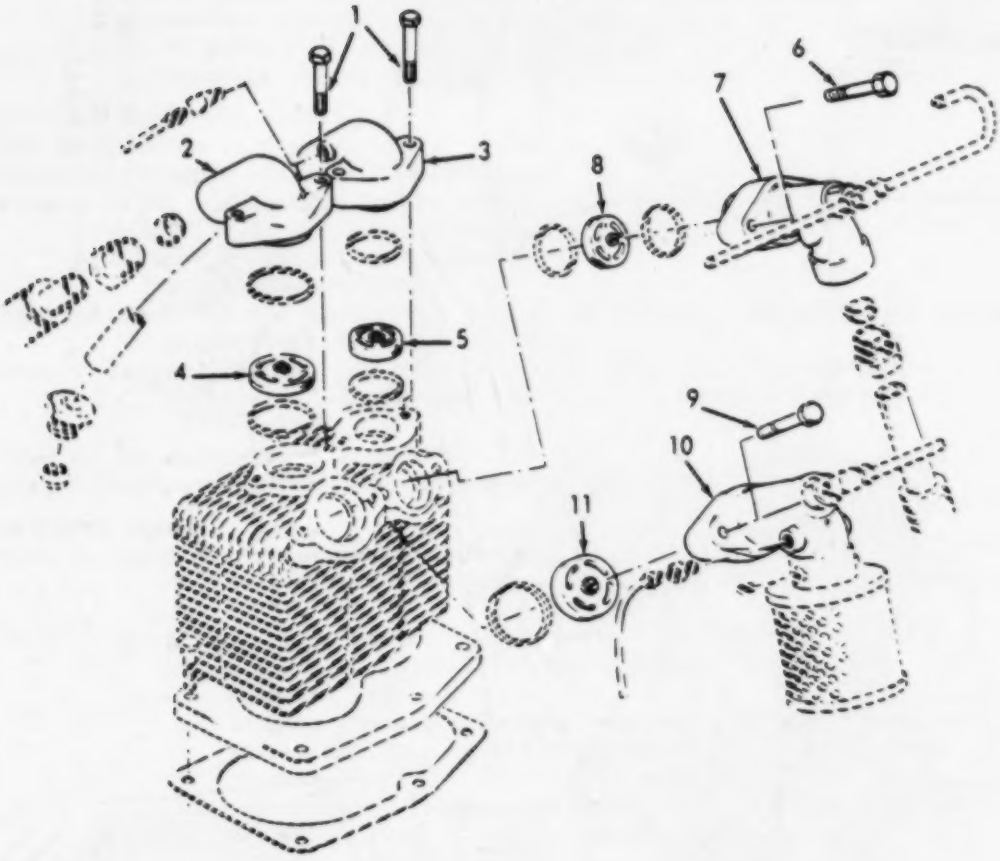


PULLER ATTACHMENT



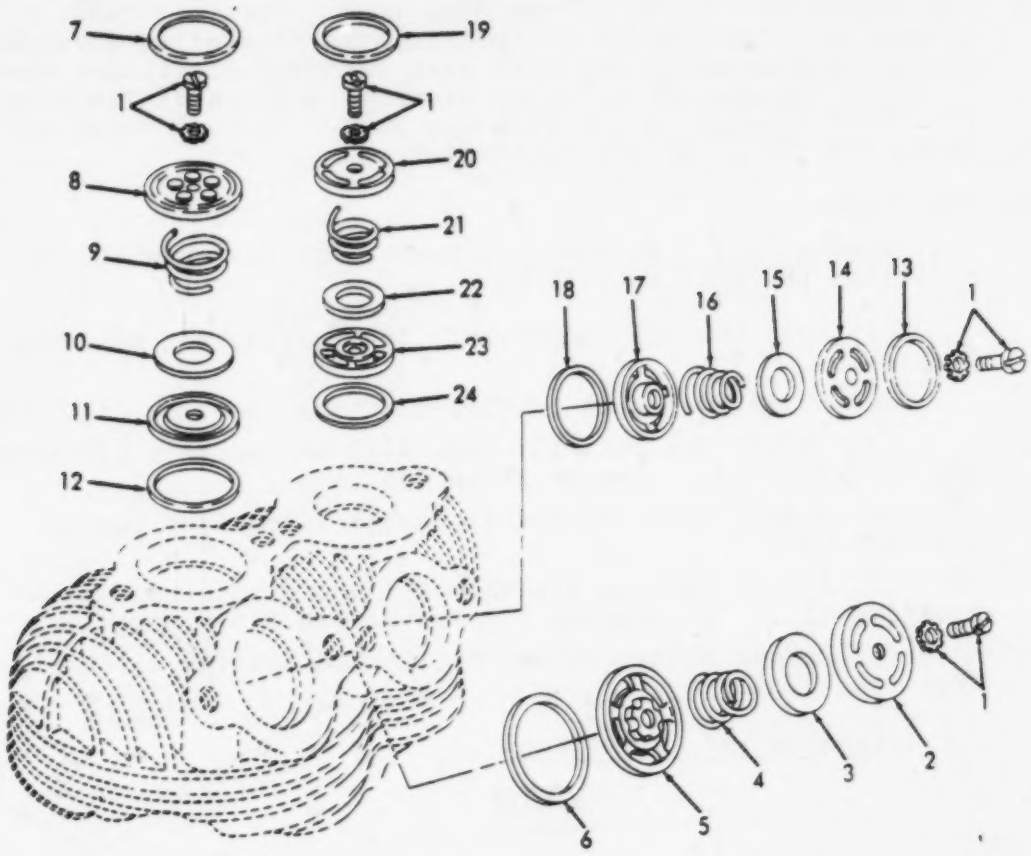
1. SET SCREW
2. SET SCREW
3. PULLEY
4. BUSHING
5. KEY
6. SHAFT

Figure 4-5. V-belts, drive pulley, flywheel, and engine removal and installation



1. Bolt
2. Exhaust Manifold
3. Exhaust Manifold
4. Valve
5. Valve
6. Bolt
7. Intake Manifold
8. Valve
9. Bolt
10. Intake Manifold
11. Valve

Figure 4-6. Intake and exhaust valves, removal and installation.



1. Screw and lockwasher
2. Intake valve seat
3. Valve disc
4. Valve spring
5. Intake valve cage
6. Valve gasket
7. Valve gasket
8. Exhaust valve cage
9. Valve spring
10. Valve disc
11. Exhaust valve seat
12. Valve gasket
13. Valve gasket
14. Intake valve seat
15. Valve disc
16. Valve spring
17. Intake valve cage
18. Valve gasket
19. Valve gasket
20. Exhaust valve cage
21. Valve spring
22. Valve disc
23. Exhaust valve seat
24. Valve gasket

Figure 4-7. Intake and exhaust valves, disassembly and reassembly.

SECTION VI. MAINTENANCE OF FUEL SYSTEM

4-11. GENERAL

The fuel system consists of a fuel tank, fuel line, and fuel line filter. A filler cap assembly, filler cap gasket, and screen are a part of the fuel tank. The fuel tank screen provides a means of trapping and preventing foreign matter from entering the fuel tank during fuel filling operations. The fuel line filter provides a means of removing water and foreign matter from the fuel. It is located between the fuel tank and carburetor.

4-12. FUEL TANK

a. Removal and Disassembly. Remove and disassemble the fuel tank assembly as follows:

(1) Stop the air compressor, and release all air from compressor.

(2) Drain fuel tank by disconnecting line (5, Fig. 4-8).

(3) Remove the nuts (1, Fig. 4-8) and washers (2) mounting the strap (6). Remove strap (6).

(4) Remove nuts (4) and disengage line (5). Remove bushings (3).

(5) Remove the cap assembly (7) and disassemble it by removing chain (8), gasket (9) and screen (10).

(6) Remove filter assembly (11) and unscrew elbow (12) from tank (13).

b. Cleaning and Inspection.

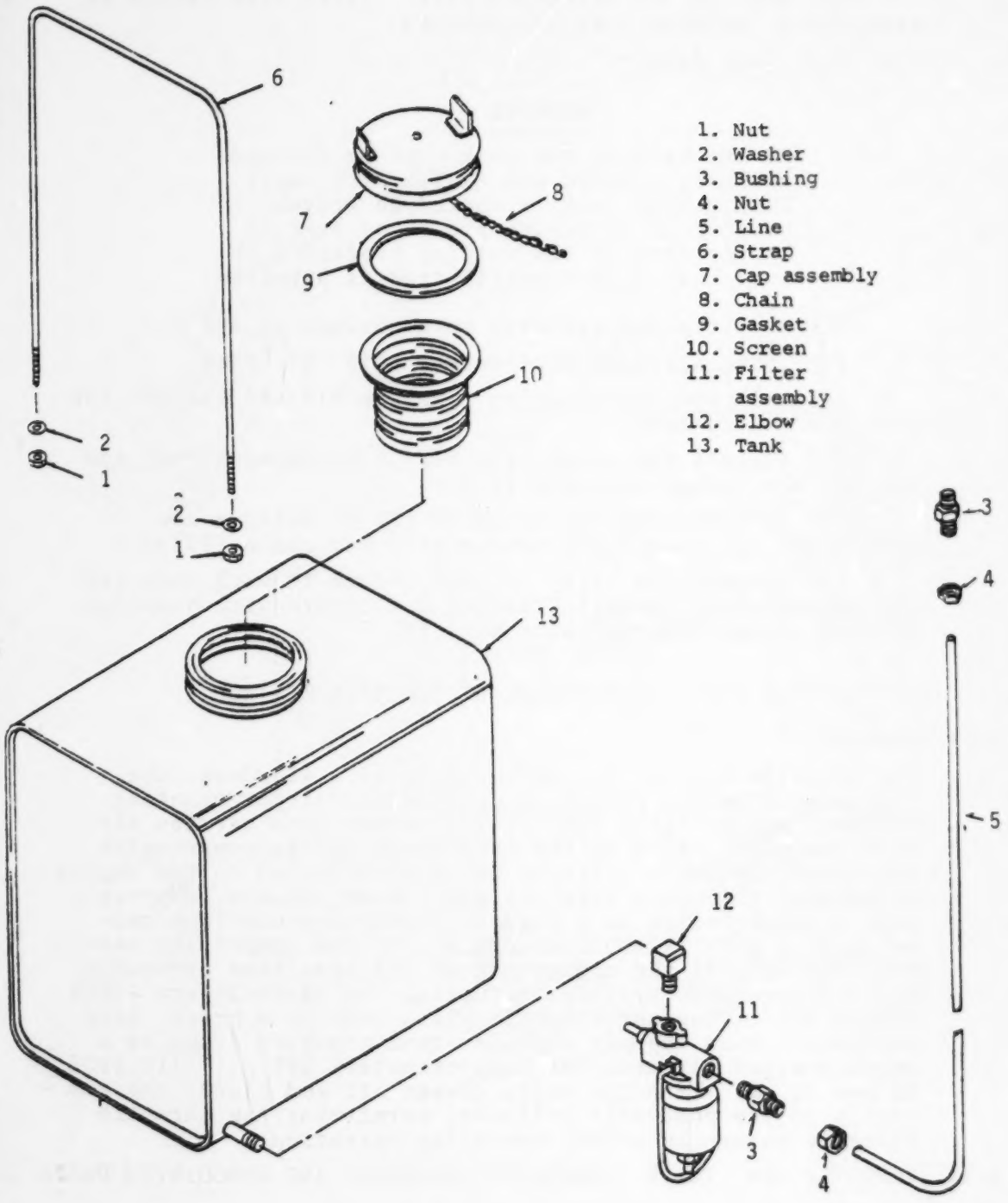
WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean the inside and outside of the fuel tank and all parts with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Blow out the fuel strainer screen with compressed air if available or wash thoroughly so that screen is free of all contamination and foreign matter. Clean filter bowl.

(3) Inspect all parts for cracks, breaks, dents, and other damage. Pay particular attention to breaks or cracks in the fuel line filter bowl and fuel strainer screen.



1. Nut
2. Washer
3. Bushing
4. Nut
5. Line
6. Strap
7. Cap assembly
8. Chain
9. Gasket
10. Screen
11. Filter assembly
12. Elbow
13. Tank

Figure 4-8. Fuel tank, filter and related parts, exploded view.

(4) Inspect the tank for corrosion, evidence of leaks, or other damage. Minor leaks or cracks may be repaired by welding.

(5) Replace any defective part. Tanks that cannot be repaired by welding must be replaced.

c. Fuel Tank Repair.

WARNING

Before welding the tank must be drained, flushed, steamed and filled with water. Ensure that tank is vented to prevent buildup of excessive pressures created by the heat of the welding process. Ensure that proper ventilation is provided.

(1) Heat the damaged area to a maximum of 500°F.

(2) Using approved procedures, weld the break.

d. Assembly and Installation. Reassemble and install the fuel tank as follows:

(1) Install the elbow (12, Fig. 4-8) on tank (13) and install the filter assembly (11).

(2) Assemble the cap assembly (7) by using a new gasket (9) and installing screen (10) and chain (8).

(3) Install the strap (6) and secure it with nuts (1) and washers (2); install line (5) and secure with bushings (3) and secure line (5) with nuts (4).

SECTION VII. MAINTENANCE OF THROTTLE CONTROL

4-13. GENERAL

The throttle control system consists of a slowdown tube, compression valve, pneumatic cylinder, cylinder mounting bracket, and throttle arm. The slowdown tube carries air from the pilot valve on the compressor to the compression valve and pneumatic cylinder which is attached to the engine carburetor through a throttle arm. When the air compressor tank pressure rises to a predetermined pressure (approximately 175 psi) (12.3025 kg per sq cm) the compressor senses this and unloads the compressor at the same time pressurizing the pneumatic cylinder actuating the throttle arm which pushes the carburetor throttle plate back to a preset idle position. When the air receiver tank pressure drops to a predetermined air pressure (approximately 145 psi) (10.1935 kg per sq cm) the pilot valve closes off and bleeds the air supply to the pneumatic cylinder, permitting the throttle plate to return to normal operating operation.

4-14. THROTTLE ARM, VALVE, PNEUMATIC CYLINDER, AND ASSOCIATED PARTS

a. Removal.

(1) Remove the intercooler tubes (1, Fig. 4-9), nuts (2) and ferrules (3).

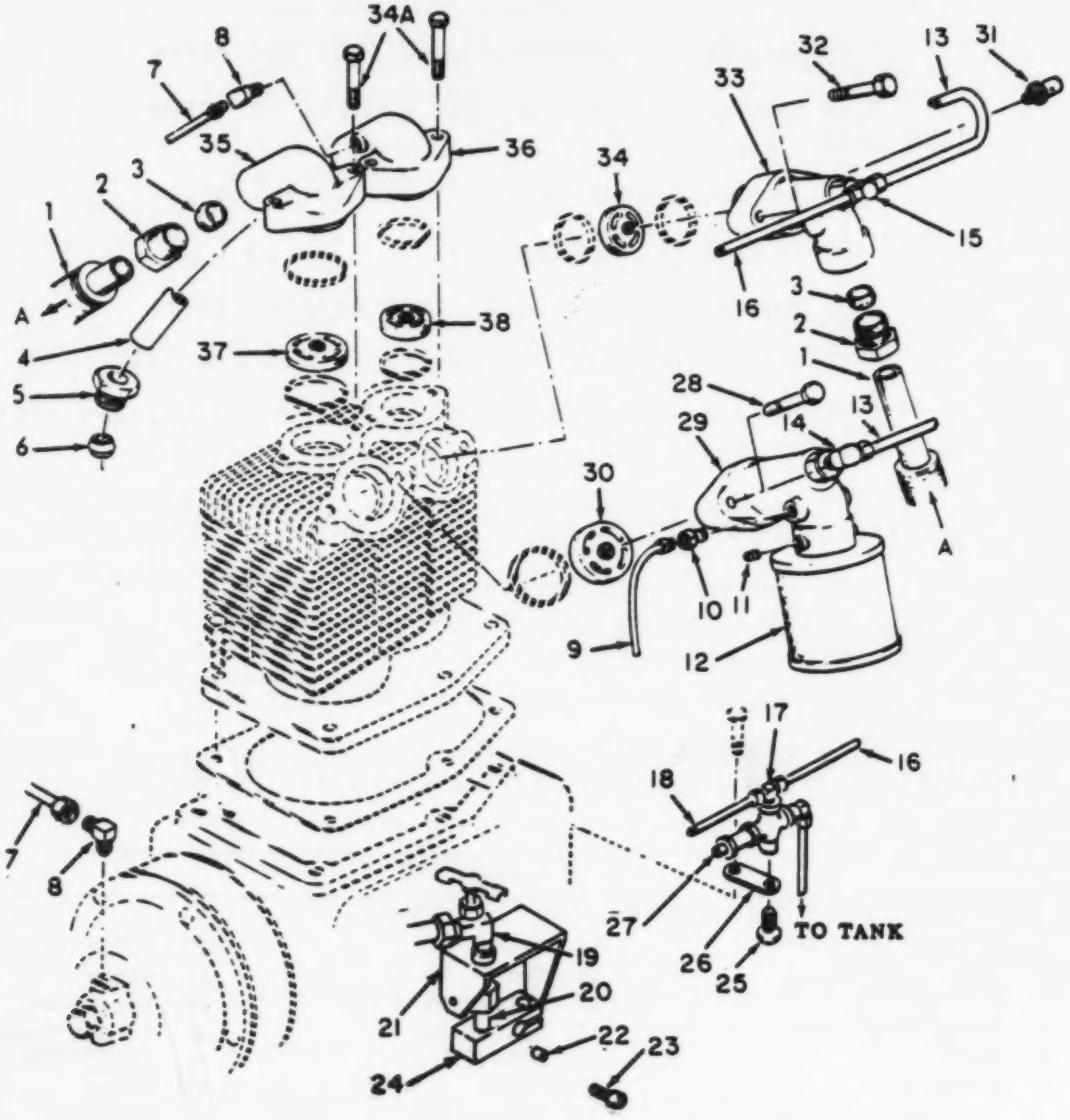


Figure 4-9. Manifolds, valves, tubes and fittings, exploded view.

(2) Remove aftercooler tube (4), nuts (5) and ferrules (6).

(3) Remove the unloading tube (7) and elbows (8).

(4) Remove breather tube (9) and fitting (10).

(5) Unscrew the setscrew (11) and free the air cleaner (12).

(6) Remove the manifold tube (13) and elbow (14).

(7) Remove branch tee (15) and remove actuating tube (16).

(8) Remove branch tee (17) and tube (18).

(9) Remove valve (19).

(10) Remove cylinder (20) from bracket (21).

(11) Remove nut (22), screw (23), and arm (24).

(12) Remove the screws (25) securing the bracket (26) to the pilot valve (27).

(13) Remove the mounting screws (28) and,remove the intake manifold (29); remove intake valve assembly (30).

(14) Remove the interstage safety valve (31) from the intake manifold (33); remove mounting screws (32) and manifold (33).

(15) Remove the intake valve assembly (34).

(16) Remove mounting screws (34A), exhaust manifolds (35 and 36) and exhaust valve assemblies (37 and 38).

KEY to Figure 4-9.

1. Intercooler tubes
2. Nuts
3. Ferrules
4. Aftercooler tube
5. Nuts
6. Ferrules
7. Unloader tube
8. Elbows
9. Breather tube
10. Fitting
11. Setscrew
12. Air cleaner
13. Manifold tube
14. Elbow
15. Tee
16. Actuating tube
17. Branch tee
18. Tube
19. Valve
20. Cylinder
21. Bracket
22. Nut
23. Screw
24. Arm
25. Screw
26. Bracket
27. Pilot valve
28. Screw
29. Intake manifold
30. Intake valve
31. Interstage safety valve
32. Screw
33. Manifold
34. Intake valve
34A. Screw
35. Exhaust manifold
36. Exhaust manifold
37. Exhaust valve
38. Exhaust valve

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean all parts in cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect all parts for cracks, breaks, dents, and other damage. Inspect tubing for crimps and cracks.

(3) Replace any defective parts as necessary.

c. Assembly and Installation.

(1) Install the exhaust valve assemblies (37 and 38, Fig. 4-9) and the exhaust manifolds (35 and 36), secure with screws (34A).

(2) Install intake valve assembly (34); then, install intake manifold (33) and secure with screws (32). Install the interstage safety valve (31).

(3) Install the intake valve assembly (30). Install intake manifold (29) and secure with screws (28).

(4) Install bracket (26) to pilot valve (27) and secure with screws (25).

(5) Install arm (24) and secure with screw (23) and nut (22).

(6) Install bracket (21) and cylinder (20).

(7) Install valve (19).

(8) Install tubes (18), branch tee (17).

(9) Install actuating tube (16) and tee (15).

(10) Install elbow (14) and tube (13).

(11) Install the air cleaner (12) back on the intake manifold and secure with setscrew (11).

(12) Install fitting (10) and tube (9).

(13) Install elbows (8) and unloading tube (7).

(14) Install ferrules (6), nuts (5) and tube (4).

(15) Install nuts (2), ferrules (3), and intercooler tubes (1).

d. Adjustment. After installation of the throttle arm the idle position of the carburetor may be adjusted to attain proper idling of the engine. To adjust the throttle arm perform the following:

(1) Start the air compressor. Allow pressure to build up in air receiver until pilot valve activates (above approximately 175 psi) (12.3 kg per sq cm) and pneumatic cylinder actuates throttle arm.

(2) Manually close engine throttle to attain idle speed of 1300-1600 rpm (TM5-2805-203-14).

(3) Rotate throttle arm (24) until it contacts cylinder plunger, while keeping engine at idle.

(4) Tighten throttle arm with screw (23) and nut (22) in this position.

SECTION VIII. MAINTENANCE OF EXHAUST SYSTEM

4-15. GENERAL

Two engine exhaust mufflers are attached to the exhaust pipe flange on either side of the engine and are further supported by brackets attached to the engine block.

4-16. ENGINE MUFFLER AND BRACKETS

a. Removal. Remove the engine mufflers as shown in Fig. 4-10.

b. Cleaning and Inspection.

WARNING

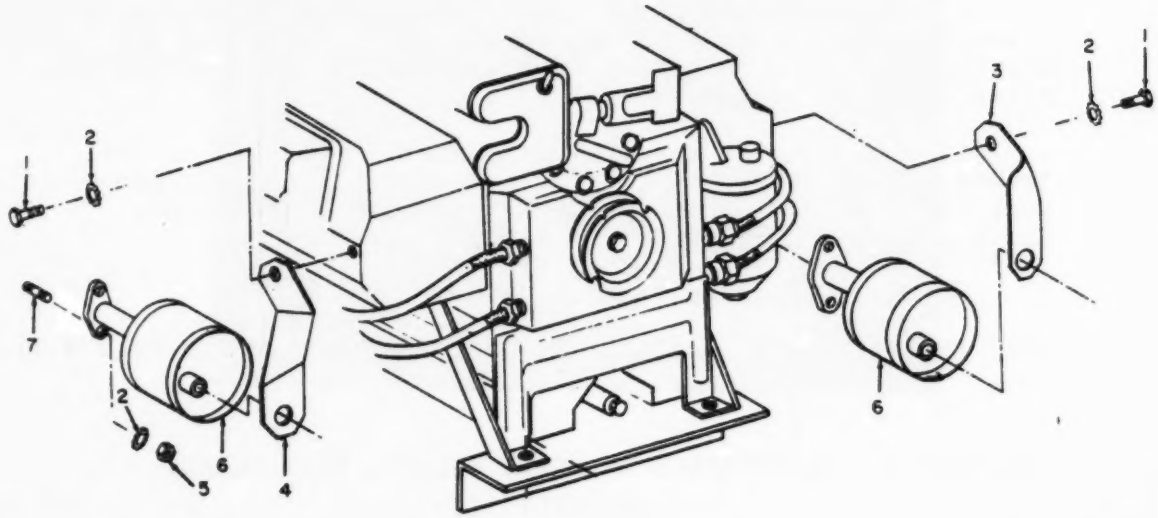
Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean all parts with cleaning solvent, Federal Specification P-D-680, and dry thoroughly. Use a wire brush on the muffler to remove any rust or corrosion that may have accumulated.

(2) Inspect the muffler and attaching parts for cracks, breaks, damaged threads or other defects.

(3) Replace a defective part.

c. Installation. Install the engine muffler as shown in Fig. 4-10.



1. Bolt
2. Lockwasher
3. Bracket
4. Bracket
5. Nut
6. Muffler
7. Stud

Figure 4-10. Engine mufflers, removal and installation.

SECTION IX. MAINTENANCE OF TOOL BOX

4-17. TOOL BOX ASSEMBLY

a. Removal. Remove the tool box as shown in Figure 4-11.

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean the tool box thoroughly inside and out with cleaning solvent, Federal Specification P-D-680, and dry thoroughly. Be careful not to damage or mar the instruction plate attached to the side of tool box.

(2) Inspect the interior and exterior of the box for cracks, dents, corrosion, and other damage. Inspect padlock for malfunction and padlock chain for broken links. Check all attaching parts for damaged threads.

(3) Replace any defective parts.

c. Installation. Install the tool box as shown in Fig. 4-11.

SECTION X. MAINTENANCE OF DRIVE PULLEY, BELT GUARD, AND BELT SET

4-18. BELT GUARD

a. Removal.

(1) Stop the engine.

(2) Release the air from the compressor by opening the draincock.

(3) Remove the belt guard as illustrated in Fig. 4-4.

WARNING

Do not operate the air compressor with the belt guard off.

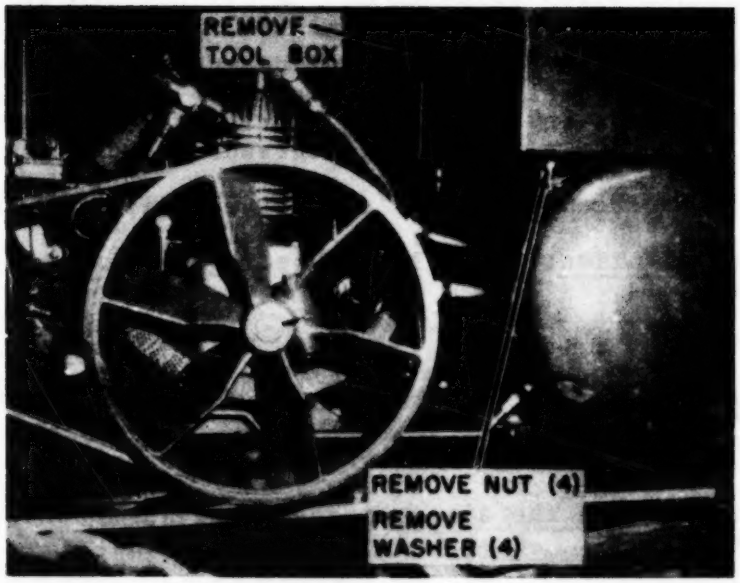


Figure 4-11. Tool box, removal and installation.

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean the parts in cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect the belt guard and mounting brackets for dents, cracks, breaks or other damage. Straighten minor dents and bends in the guard and brackets. Inspect all attaching hardware for damaged threads.

(3) Replace damaged or defective parts.

c. Installation. Install the belt guard as illustrated in Figure 4-4.

4-19. V-BELTS

a. Removal.

(1) Stop the engine.

(2) Release the air from the compressor by opening the draincock.

(3) Remove the belt guard, Fig. 4-4.

(4) Remove the V-belts, Fig. 4-5.

b. Cleaning and Inspection.

(1) Clean the V-belts with a clean dry cloth, taking care to remove all dirt, grease, and oil.

(2) Inspect the V-belts for cuts, fraying, and wear.

(3) Replace worn or damaged V-belts.

NOTE

Always replace the V-belts in matched set.

c. Installation. Install the V-belts, Fig. 4-5.

d. Adjustment.

(1) Loosen engine attaching hardware (Fig. 4-5). It is not necessary to remove the attaching parts.

(2) Move the engine away from the compressor until there is tension on the V-belts. Press on the V-belts with your fingers about midway between the engine drive pulley and the compressor flywheel. If the depression is more than one half inch (1.27 cm), readjust tension.

(3) Tighten the engine mounting hardware. Be extremely careful that the engine is square in relation to the mounting base and flywheel to avoid beinding and excessive wear of the V-belts.

(4) Install the belt guard.

4-20. ENGINE DRIVE PULLEY

a. General. The engine drive pulley consists of the pulley, a stub shaft, bushing and setscrews.

b. Removal.

(1) Remove the V-belt set.

(2) Remove the setscrews (1 and 2, Fig. 4-5).

(3) Remove pulley (3) and bushing (4) from shaft (6) using gear puller as shown in Fig. 4-5.

c. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean all parts with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect the drive pulley for cracks, chips, and other damage particularly in V-groove, where excessive wear to the V-belts could occur. Inspect all other parts including threads for damage or wear.

(3) Replace all defective parts.

d. Installation.

(1) Install shaft key (5, Fig. 4-5) into keyway on engine shaft (6).

(2) Position bushing (4) over engine shaft. Align keyway in bushing with shaft key and slide bushing onto shaft.

(3) Position pulley (3) over bushing.

(4) Align setscrew holes in pulley over mating holes in bushing.

(5) Assemble loosely, set screws (1) and (2) in pulley hub.

NOTE

The long (3/4-inch) setscrew must be used in hole over shaft key.

(6) Slide bushing and hub along shaft until shaft extends 1/4- to 3/8-inch beyond end of bushing.

(7) Secure two setscrews with Allen wrench.

(8) Install V-belt set.

SECTION XI. MAINTENANCE OF COMPRESSOR

4-21. COMPRESSOR

a. General. The air compressor, gasoline engine, and air receiver tank are attached to a base assembly which is then mounted to a trailer.

b. Removal.

(1) Stop the air compressor, and release all air from the compressor by opening the draincock, Fig. 2-4.

(2) Remove slowdown tube from pilot valve to pneumatic cylinder on engine. Remove sensing tube from air receiver to pilot valve and disconnect plumbing and connection to check valve. Refer to Figures 4-12 and 4-19.

(3) Remove belt guard (Fig. 4-4) and V-belts.

(4) Remove compressor as illustrated in Fig. 4-12.

c. Cleaning and Inspection. Clean the compressor with dry compressed air and inspect for damage.

d. Installation.

(1) Install compressor as illustrated in Fig. 4-12.

(2) Install V-belts and belt guard. Connect slowdown tube, sensing tube, and check valve connections to compressor.

4-22. COMPRESSOR FLYWHEEL

a. Removal.

(1) Remove the belt guard (Fig. 4-4) and V-belt set.

(2) Remove the bolt and nut (Fig. 4-5).

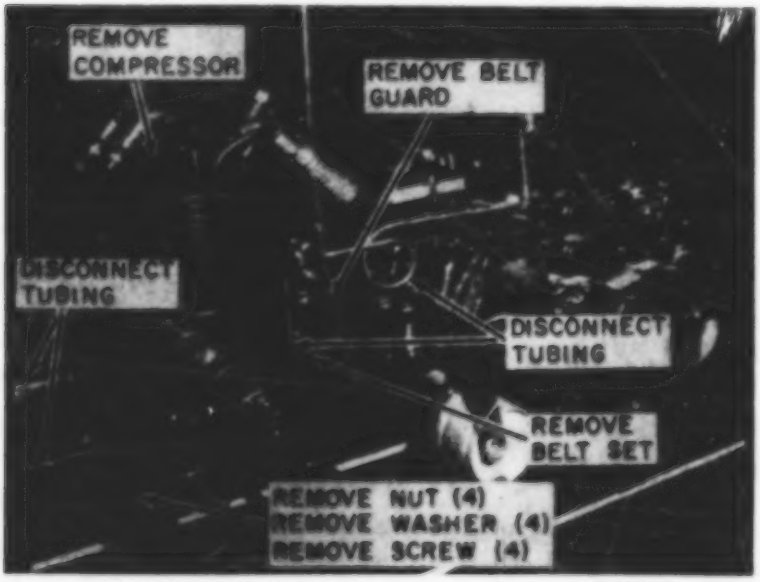


Figure 4-12. Compressor, removal and installation.

(3) Remove flywheel from compressor shaft using gear puller in same manner as used for engine pulley (Fig. 4-5).

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean all parts with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect the flywheel for cracks, chips, distortion and wear. Inspect V-grooves for rough or chipped areas where excessive wear to the V-belts could occur. File off all burrs.

(3) Replace all defective parts.

c. Installation.

(1) Position flywheel (Fig. 4-5) over end of crankshaft.

(2) Align keyway in flywheel with keyway in crankshaft.

(3) Install shaft key into crankshaft keyway.

(4) Using plastic mallet, drive flywheel onto crankshaft, until flywheel is fully seated. Install and tighten bolt and nut.

(5) Install V-belt set and belt guard (Fig. 4-4).

4-23. TUBE ASSEMBLIES

a. General. The tube assemblies include the intercooler and aftercooler tubes, the sensing, breather, and head unloader tubes.

b. Removal.

(1) Stop the engine, Fig. 2-4.

(2) Release the air from the compressor by opening the draincock, Fig. 2-4.

(3) Remove the tube assemblies as illustrated in Fig. 4-9.

c. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean the intercooler and aftercooler tubes with a soft bristle brush and cleaning solvent, Federal Specification P-D-680, and dry thoroughly. Clean dirt and dust from between the fins to prevent a buildup which acts as an insulation.

(2) Wipe other tubes with a cloth dampened with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(3) Blow out all tubing with compressed air.

(4) Inspect the tubing for crimps, cracks, and breaks. Straighten bent fins. Inspect threaded parts for thread damage. Replace all unserviceable parts.

d. Installation.

(1) Install the tube assemblies as illustrated in Fig. 4-9.

(2) Start the air compressor, Fig. 2-3.

(3) Apply soap solution with a brush to all connections and check for air leaks. Leaks will be evidenced by bubbles. Tighten or reinstall leaking parts.

4-24. INTERSTAGE SAFETY VALVE

a. Removal. Remove the interstage safety valve as illustrated in Figure 4-9. Do not disassemble the valve.

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (38°C).

Clean the valve with cleaning solvent, Federal Specification P-D-680, and dry thoroughly. Inspect valve for damaged threads or other signs of damage. Replace if defective.

c. Installation. Install the interstage safety valve (31, Fig. 4-9).

4-25. HEAD UNLOADERS AND PILOT VALVE

a. General. The pilot valve senses air receiver tank pressure, and when the pressure is raised to a predetermined setting (approximately 175 psi) (12.3 kg per sq cm) air is released to the head unloaders. The head unloaders are an intake valve hold open mechanism. When this occurs, the intake valves are held open and the compressor stops compressing air and runs free until the pilot valve senses that the pressure in the tank has dropped to the predetermined setting (approximately 145 psi) (10.2 kg per sq cm). At this time the air is released from the head unloaders, the intake valves released, and the compressor starts compressing air again. The pilot valve is designed to function as an automatic "on" and "off" air switch. A sensing tube from the air receiver tank to the bottom of the pilot valve allows pressure to act on the bottom of the valve. When pressure is great enough to overcome the spring force holding the valve down on the lower seat, it lifts off the seat and allows air to flow around the valve and out through side ports. One opens to the head unloaders, the other to the pneumatic cylinder and throttle control on the engine. When the valve lifts off the lower seat it moves up and seats on an upper valve seat where it is held by tank pressure. When pressure falls, the valve spring forces the valve back down on the lower seat. Air from the lines to the head unloaders and throttle control escapes through the upper seat in the pilot valve and out a vent hole. The pressure at which the valve is "on" or "off" is controlled by the spring force. A small adjustment can be made on the spring force by compressing the spring more or less with an adjusting screw provided on the pilot valve.

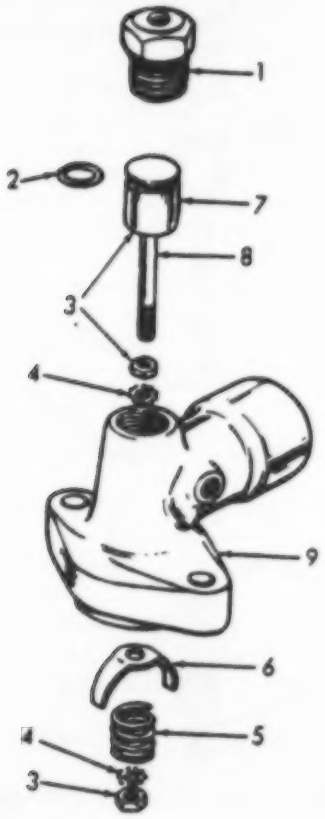
b. Removal and Disassembly, Head Unloaders.

(1) Stop the air compressor, and release all air from the compressor by opening the draincock, Fig. 2-4.

(2) Remove the sensing and head unloader tubes (9, 13, and 16, Fig. 4-9) from the pilot valve and head unloaders (29 and 33).

(3) Remove the compressor air cleaner (12), head unloader assemblies and disassemble the head unloaders as follows:

(a) Remove the body (1, Fig. 4-13) and O-ring (2).



1. Body
2. O-ring
3. Nut
4. Washer
5. Spring
6. Claw
7. Piston
8. Rod
9. Manifold

Figure 4-13. Head unloader manifold, low pressure intake-- exploded view.

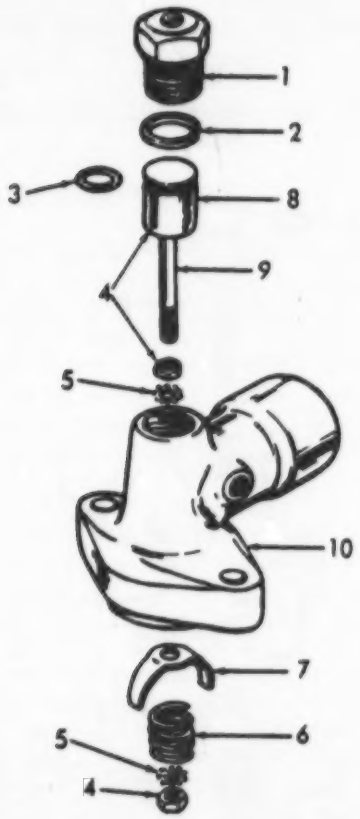
(b) Remove the nuts (3) and washers (4).

(c) Disengage the spring (5) and remove claw (6), piston (7) and rod (8) from manifold (9).

(d) Remove the body (1, Fig. 4-14), gasket (2), and O-ring (3).

(e) Remove the nuts (4) and washers (5) and disengage spring (6).

(f) Remove claw (7) and remove piston (8) and rod (9) from manifold (10).



1. Body
2. Gasket
3. O-ring
4. Nut
5. Washer
6. Spring
7. Claw
8. Piston
9. Rod
10. Manifold

Figure 4-14. Head unloader manifold, high pressure intake--exploded view.

c. Cleaning and Inspection, Head Unloaders.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean the head unloader parts with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect all parts for cracks, breaks, wear, distortion, and other damage. Replace a damaged or defective part.

d. Assembly and Installation, Head Unloaders.

(1) Prior to installation of head unloader in manifold, the actuating claw must be positioned so that it will enter two slots in the compressor intake valve. Reassemble the head unloaders, (a) through (f), below. Note the position of the slots in the compressor intake valve and rotate the actuating fork to corresponding position. When the head unloader piston is in uppermost position, the fork should protrude 3/32 inch below the bottom of the manifold.

(a) Install the rod (9, Fig. 4-14) and piston (8) in the manifold (10); install the claw (7).

(b) Install spring (6), washers (5) and nuts (4).

(c) Install O-ring (3), position a gasket (2), and install the body (1).

(d) Install rod (8, Fig. 4-13) and piston (7) in the manifold (9); install claw (6) and spring (5).

(e) Install washers (4) and nuts (3).

(f) Install O-ring (2) and body (1).

(2) Holding the piston return spring in position on the actuating fork with one finger, place head unloader manifold in position over compressor intake valve. Install screws, drawing up on both sides a little at a time to insure proper entry of manifold into compressor valve well. To check for correct positioning of actuating fork, place blunt instrument in opening at top of cylinder body and push down on piston. If correctly installed, piston will move down and the spring will return it.

(3) Tighten manifold capscrews to 45 ft-lbs (6.22 kgm). Reconnect all tubing.

(4) Start the compressor. When 50 psi (3.5150 kg per sq cm) or more pressure has been developed in the air receiver tank, check manifolds near valve parts and tube connections for leaks with a soap solution. When pressure reaches approximately 175 psi (12.3 kg per sq cm), the pilot valve should actuate the head unloader and the compressor should run unloaded. When this occurs a distinct difference in sound will be heard and the unloaded air can be felt coming out of compressor air cleaner. Run the compressor in the unloaded condition for 5 to 10 minutes while the tank pressure is observed. Adjustment of the actuating forks must be made if the compressor fails to unload completely.

(5) Bleed the air from the tank down to approximately 145 psi (10.2 kg per sq cm). The pilot valve should actuate and the compressor should run loaded. While running loaded, hold hand near air cleaner. Blow back from the air cleaner indicates actuating fork is not allowing the compressor intake valves to seat properly.

e. Removal and Disassembly, Pilot Valve.

(1) Stop the air compressor, and release all air from the compressor by opening the draincock, Fig. 2-4.

(2) Remove the sensing tube from the bottom of the pilot valve (27, Fig. 4-9), and disconnect the head unloader and throttle control tubes (16 and 18) from the valve. Remove the pilot valve and mounting bracket (26) as shown in Figure 4-9. The pilot valve should not be disassembled. Replace entire valve if malfunctioning.

f. Cleaning and Inspection, Pilot Valve.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean valve with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect for cracks, breaks, wear, or damage. Replace a damaged pilot valve.

g. Installation, Pilot Valve.

(1) Install the assembled valve and bracket as illustrated in Figure 4-9.

(2) Reconnect tubing to pilot valve.

h. Adjustment, Pilot Valve.

(1) Start the compressor. Allow compressor to build up tank pressure to desired cut-out pressure (approximately 175 psi) (12.3 kg per sq cm). The cut-out pressure may be changed by loosening the locknut (1, Fig. 4-15) and turning adjusting screw clockwise to increase pressure and counterclockwise to decrease pressure.

(2) Bleed off air until pilot valve is actuated noting the tank pressure at this point. It should be approximately 145 psi (10.2 kg per sq cm).

(3) Changing the differential (difference there is between load and unload pressure) is accomplished by holding the lock nut closest to the body of the valve (2) so that it does not move, then turning the large nut (3) next to it very slightly clockwise to increase the differential pressure, and counterclockwise to decrease it.

(4) When pressure adjustments are completed, tighten all lock nuts on the pilot valve. Stop the compressor.

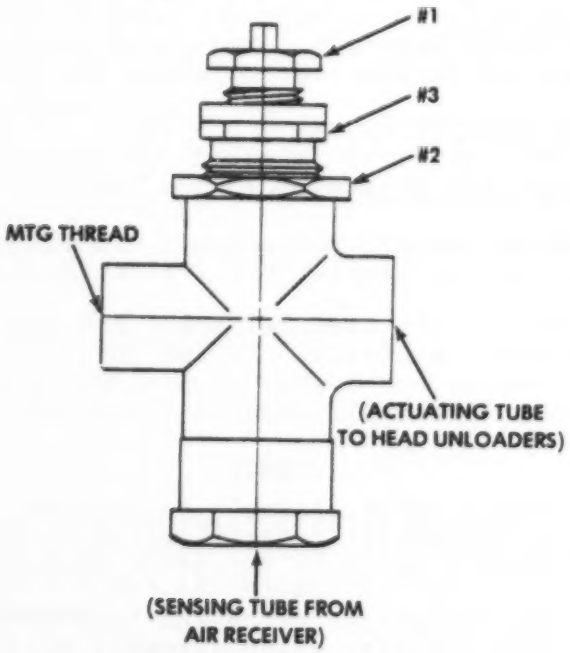


Figure 4-15. Pilot valve adjustment.

4-26. EXHAUST MANIFOLDS

a. Removal. Stop the air compressor, and release all air from the compressor by opening the draincock, Fig. 2-4. Disconnect tubing from the high pressure and low pressure exhaust manifolds (35 and 36, Fig. 4-9). Remove the exhaust manifolds as illustrated.

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean all parts with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect the manifolds for cracks, breaks, or dents. Inspect all threaded fittings for damaged threads.

(3) Replace all defective parts.

c. Installation. Install the exhaust manifolds (35 and 36, Fig. 4-9) as illustrated. Reconnect all tubing connections. Tighten manifold capscrews to 45 ft-lbs (6.2 kgm).

4-27. INTAKE AND EXHAUST VALVES

a. Removal and Disassembly.

(1) Stop the air compressor, and release all air from the compressor by opening the draincock, Fig. 2-4.

(2) Remove the head unloaders (29 and 33, Fig. 4-9), and the exhaust manifolds (35 and 36).

(3) Remove and disassemble the intake and exhaust valves as follows:

NOTE

When a valve assembly is removed, it should be tagged for identification of cylinder and whether it is an intake or exhaust valve.

(a) Remove the screw and lockwasher assemblies (1, Fig. 4-7) securing valve assembly parts.

(b) Remove the seat (2), disc (3), spring (4), cage (5), and gaskets (6 and 7).

(c) Remove cage (8), spring (9), disc (10), seat (11), and gaskets (12 and 13).

(d) Remove the seat (14), disc (15), spring (16), cage (17), and gaskets (18 and 19).

(e) Remove cage (20), spring (21), disc (22), seat (23), and gasket (24).

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean all parts with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect all valve seats and cages for cracks, breaks, rough or scored seats, and mating surfaces. Replace if defective.

(3) Inspect the springs for distortion, weakness, or broken coils. Replace if defective.

(4) Replace all gaskets each time valves are removed or disassembled.

c. Assembly and Installation.

(1) Reassemble and install the intake and exhaust valves as follows:

NOTE

Be sure to replace valve assembly in the same cylinder from which it was removed. Do not mix intake valve with exhaust valves.

(a) Install gasket (24, Fig. 4-7), seat (23), disc (22), spring (21), and cage (20).

(b) Install gaskets (18 and 19), cage (17), spring (16), disc (15), and seat (14).

(c) Install gaskets (12 and 13), seat (11), disc (10), spring (9), and cage (8).

(d) Install gaskets (6 and 7), cage (5), spring (4), disc (3), and seat (2).

(e) Install all four screw and washer assemblies (1).

(2) Install the head unloaders (29 and 33, Fig. 4-9), and reconnect tubing.

(3) Install the exhaust manifolds (35 and 36), and reconnect tubing.

4-28. CENTRIFUGAL UNLOADER

a. Removal and Disassembly. Remove and disassemble centrifugal unloader (16, Fig. 6-2) as follows:

(1) Remove the muffler assembly (1, Fig. 4-16) and disassemble body (2), screen (3), and packing (4).

(2) Remove valve body (5), spring (6), and ball (7).

(3) Remove the six mounting screws (8), loosening cover (10), and remove elbow (9) from cover; remove cover (10).

(4) Remove plunger (11) and weights (12).

(5) Remove sleeve (13), spring (14), washer (15), screw (16), washer (17), pin (18), and spindle (19).

(6) Remove gasket (20) and baffle plate (21).

(7) Remove body (22) from housing (24).

(8) Remove the four mounting screws (23) and housing (24); remove housing gasket (25).

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean all parts with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect the springs for evidence of loss of tension and set. Replace if defective.

(3) Inspect the housing cover, baffle plate, and housing for cracks, breaks, damaged threads, or other damage. Replace if defective.

(4) Inspect the plunger, sleeve, governor pin, spindle and weights, for cracks, nicks, burrs, wear or other damage. Replace all damaged or worn parts.

(5) Inspect all hardware for breaks, distortion, or damaged threads. Replace all damaged hardware.

(6) Discard and replace all gaskets.

c. Assembly and Installation.

(1) Carefully install the housing (24, Fig. 4-16). Leave out the housing gaskets (25) at this time. Attach the housing to the crankcase with one screw (23) at the top and one screw at the bottom. Be sure that the main bearing assembly on the end of the crankshaft fits properly in the housing. Set the two attaching screws fingertight. Now, use feeler gage and measure the gap between housing and crankcase at top and bottom. Average the two dimensions and add .005 inch (.01 cm). This will determine the selection of housing gaskets to use. A combination of gaskets should equal the total determined above. Proper adherence to this procedure will minimize crankshaft end play.

(2) Remove housing from crankcase and install housing gaskets as determined above. Install housing and secure with attaching screws. Tighten screws to 25 ft-lbs (3.4 kgm).

(3) Install the coupling (22) in housing (24).

(4) Install baffle plate (21) and gasket (20).

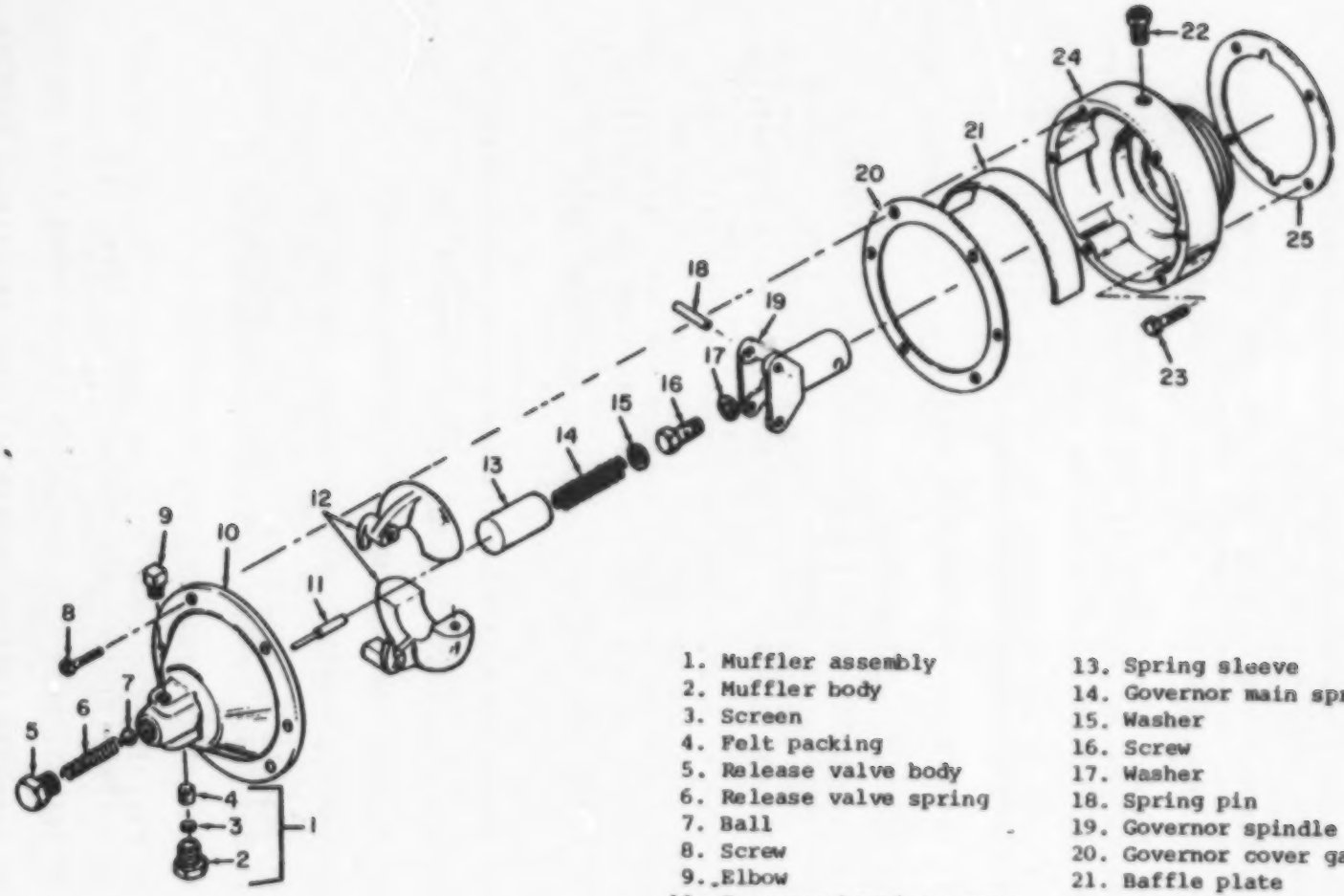
(5) Install spindle (19), pin (18), washer (17), screw (16), washer (15), spring (14), and sleeve (13).

(6) Install weight (12) and plunger (11).

(7) Position the cover (10) on housing (24) and install mounting screws (8); install elbow (9) on cover (10).

(8) Install ball (7), spring (6), and valve body (5).

(9) Assemble muffler assembly (1) by installing packing (4), screen (3), and body (2).



1. Muffler assembly
2. Muffler body
3. Screen
4. Felt packing
5. Release valve body
6. Release valve spring
7. Ball
8. Screw
9. Elbow
10. Governor housing cover
11. Release valve plunger
12. Governor weight
13. Spring sleeve
14. Governor main spring
15. Washer
16. Screw
17. Washer
18. Spring pin
19. Governor spindle
20. Governor cover gasket
21. Baffle plate
22. Coupling
23. Screw
24. Governor housing
25. Governor housing gasket set

Figure 4-16. Centrifugal unloader, exploded view.

4-29. PLUGS, GAGE AND NIPPLE

a. Removal.

(1) Stop the air compressor, and release all air from the compressor by opening the draincock (7, Fig. 4-18).

(2) Drain oil from crankcase by removing oil drain plug (5, Fig. 4-17).

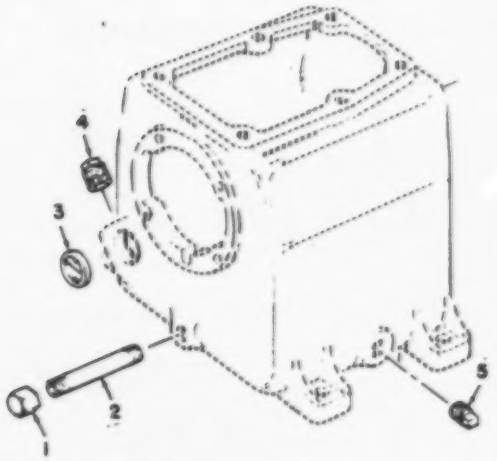
(3) Remove cap (1) and nipple (2).

(4) Remove gage (3) and plug (4).

(5) Remove plug (4).

NOTE

The oil level sight gage is not normally removed since it must be pried out and in the process will probably be damaged. Therefore, remove only if gage is broken or damaged.



1. Cap
2. Nipple
3. Gage
4. Plug
5. Plug

Figure 4-17. Plugs and gage, removal and installation.

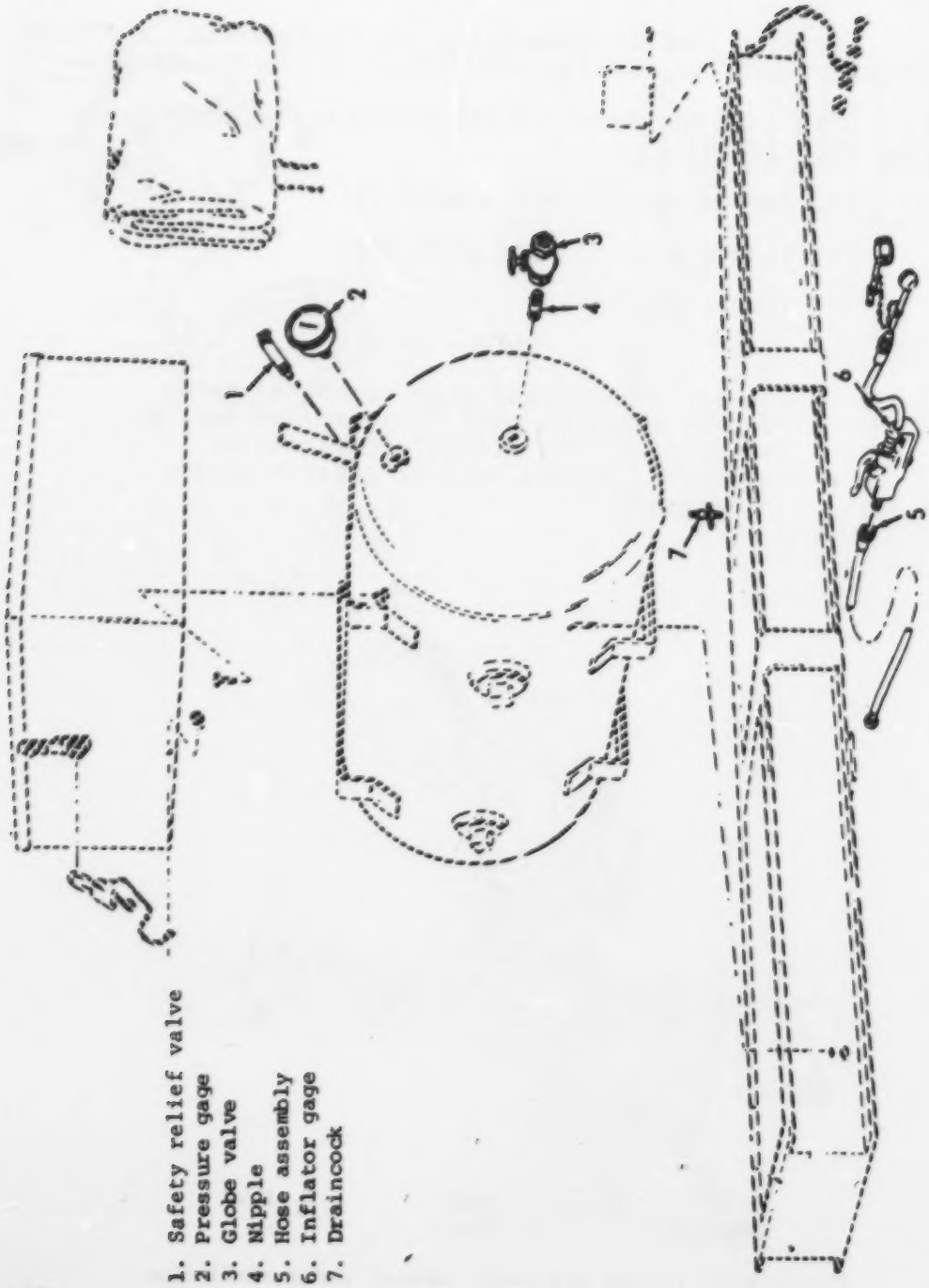


Figure 4-18. Compressor controls and instruments, exploded view.

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean parts with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect for cracks, breaks, and dents. Straighten out minor dents. Replace if defective.

c. Installation.

(1) Install plugs (4 and 5).

(2) Install nipple (2), and cap (1).

(3) If oil level sight gage (3) was removed, replace it with a new one.

SECTION XII. MAINTENANCE OF COMPRESSOR CONTROLS, INSTRUMENTS, AND RELATED PARTS

4-30. SAFETY RELIEF VALVE

a. Removal.

(1) Stop air compressor, and release all air from the air receiver by opening the draincock.

(2) Remove the safety relief valve (1, Fig. 4-18).

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean valve with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect valve for cracks, breaks, damaged threads, or other damage. Replace safety valve if damaged or defective. The safety valve has been preset (200 psi) (14.1 kg per sq cm) and should not be disassembled.

c. Installation. Install the safety valve (1, Fig. 4-18).

4-31. PRESSURE GAGE

a. Removal.

(1) Stop the air compressor, and release all air from the compressor by opening the draincock.

(2) Remove the pressure gage (2, Fig. 4-18).

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

Clean gage with a cloth dampened with cleaning solvent, Federal Specification P-D-680, and dry thoroughly. Check for cracks, dents, breaks, or other damage. Replace gage if damaged or broken.

c. Installation. Install the pressure gage (2, Fig. 4-18).

4-32. GLOBE VALVE AND INFLATOR GAGE

a. Removal.

(1) Stop the air compressor, and release all air from the air receiver by opening the draincock.

(2) Remove the air hose assembly (5, Fig. 4-18) from the globe valve if attached. Remove the globe valve (3) and nipple (4) from the air receiver.

(3) Do not disassemble globe valve. Replace if defective.

(4) Remove the inflator gage (6).

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

Clean all parts with cleaning solvent, Federal Specification P-D-680, and dry thoroughly. Inspect parts for cracks, dents, breaks, or other damage. Replace defective parts.

c. Installation.

(1) Install nipple (4, Fig. 4-18) and globe valve (3). Install hose assembly.

(2) Install the inflator gage (6).

4-33. OIL LEVEL SIGHT GAGE

a. Removal.

(1) Stop the air compressor, and drain all air from the compressor by opening the draincock.

(2) Drain oil from crankcase by removing oil drain plug.

(3) Remove oil level sight gage (3, Fig. 4-17) by carefully prying it out of the crankcase.

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F(59°C).

Clean the oil level gage with cleaning solvent, Federal Specification P-D-680, and dry thoroughly. Inspect the gage for breaks, cracks, or damaged threads. Inspect the glass for marks, breaks, or cloudiness that might impair visual observation of oil level within the crankcase. Replace gage if damaged or defective.

c. Installation.

(1) Carefully press oil level sight gage (3, Fig. 4-17) in crankcase.

(2) Install oil drain plug and service in accordance with the lubrication chart.

4-34. DRAINCOCK

a. Removal.

(1) Stop the air compressor, and release all air from the air receiver by opening the draincock. If draincock is not operative, close globe valve on the air receiver and remove hose assembly. Then open globe valve and allow air to drain from the air receiver.

(2) Remove the draincock (7, Fig. 4-18) from the bottom of the air receiver tank.

b. Cleaning and Inspection.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

Clean the draincock with cleaning solvent, Federal Specification P-D-680, and dry thoroughly. Open and close stem of draincock a number of times, washing thoroughly to remove any dirt or foreign matter. Blow dry with compressed air. Inspect for damaged threads, dents, cracks, or breaks. Replace if damaged.

c. Installation. Install draincock (7, Fig. 4-18) in air receiver tank.

SECTION XIII. MAINTENANCE OF AIR RECEIVER AND CHECK VALVE

4-35. AIR RECEIVER

a. Removal.

(1) Stop the air compressor, and release all air from the air receiver by opening the draincock.

(2) Remove all tubing and plumbing connections to the tank, and remove the check valve and air receiver tank as illustrated in Figure 4-19.

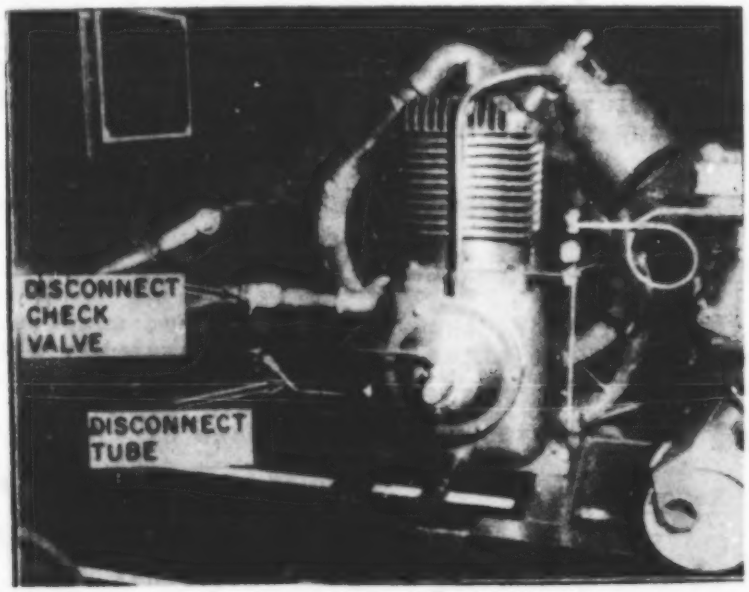


Figure 4-19. Air receiver, removal and installation.

b. Cleaning and Inspection

(1) Clean items with dry compressed air and inspect for damage to tank, mounts, feet and brackets.

(2) Replace a damaged air receiver or check valve.

c. Installation. Install the air receiver tank and check valve as illustrated in Fig. 4-19 and reconnect all tubing and plumbing to the tank.

SECTION XIV. MAINTENANCE OF ENGINE

4-36. GENERAL

The air compressor, the gasoline engine, compressor, and air receiver tank are attached to a base assembly which is then mounted to a trailer.

4-37. ENGINE

a. Removal.

(1) Stop the air compressor, and release all air from the compressor by opening the draincock.

(2) Remove fuel line (Fig. 4-5) connections to the engine after first draining the fuel tank.

(3) Disconnect tubing from pilot valve to pneumatic cylinder mounted to engine.

(4) Remove belt guard and V-belts.

(5) Remove four nuts holding engine and remove engine.

b. Cleaning. Clean the engine with dry compressed air and inspect for damage.

c. Inspection and Test. Refer to engine technical manual, TM5-2805-203-14.

d. Installation.

(1) Install engine with four nuts (Fig. 4-5).

(2) Install and adjust V-belts and install belt guard. Connect fuel line to engine and slowdown tube to throttle controls. Service the air compressor in accordance with daily preventive maintenance services.

SECTION XV. MAINTENANCE OF TRAILER

4-38. FRAME, HITCH, WHEELS AND RELATED COMPONENTS

Refer to trailer technical manual TM9-2330-251-15.

SECTION XVI. FIRE EXTINGUISHERS

4-39. FIRE EXTINGUISHER (MONOBROMOTRIFLUOROMETHANE TYPE) (HALON 1301)

a. Description. The monobromotrifluoromethane type fire extinguisher is generally suitable for all types of fires, except fires involved with LOX (liquid oxygen) generating equipment. The fire extinguisher is furnished with a disposable type cylinder.

b. Operation. To operate the fire extinguisher, perform the following:

(1) Remove fire extinguisher from its location.

(2) Break seal by pulling safety pin from handle.

(3) Point horn at base of flame.

(4) Press trigger for discharge and direct stream at base of flame.

(5) Replace cylinder immediately after using.

c. Replacement of Cylinder. To replace cylinder, perform the following:

(1) Press lever to release pressure from used cylinder.

(2) Loosen swivel valve coupling nut and remove valve assembly from used cylinder.

(3) Remove instruction band from used cylinder.

(4) Place new cylinder through instruction band.

(5) Replace safety pin in valve and seal pin with sealing wire.

(6) Attach valve assembly and tighten swivel coupling nut on the new cylinder and place fire extinguisher in mounting bracket.

(7) Adjust instruction band on cylinder to show maintenance and operating instructions.

d. Maintenance. Weigh fire extinguisher every 3 months and replace cylinder if gross weight has decreased 4 ounces (112 grams) or more. Lubricate cylinder neck threads with one drop of OE-30 oil before reassembly.

4-40. FIRE EXTINGUISHER (CARBON DIOXIDE TYPE)

a. Description. The carbon dioxide type fire extinguisher is suitable for electrical and flammable liquid fires. The carbon dioxide types are of the 4 pound (1.8 kg), 7 1/2 pound (3.4 kg), and 10 pound (4.5 kg) sizes. The 4 pound (1.8 kg) extinguisher is portable; the other two are the fixed type.

b. Operation. Remove fire extinguisher from its location; break the seal, operate the control valve, and direct the stream at the base of the flame.

c. Maintenance. For maintenance of the fire extinguisher, refer to TM 5-687 and TM9-1799.

4-41. FIRE EXTINGUISHER (DRY CHEMICAL TYPE)

a. Description. The dry chemical type fire extinguisher is suitable for use on all types of fire and is effective in areas where ambinet temperature is -25°F (-32°F) and above. The fire extinguisher is a 2 1/2 pound (1.1 kg,) stored pressure, lever operated extinguisher.

b. Operation. Remove the fire extinguisher from its location, lift the handle, press lever, and direct the powder at the base of the flame using a side-to-side sweeping motion.

c. Maintenance. Weigh the fire extinguisher every six months and replace the extinguisher if weight is less than 4 1/2 pounds (2 kg) or if pressure is below 125 pounds. Refer to SB5-111. The dry chemical fire extinguisher will be serviced at installation level through Repair and Utilities facilities, with the filling agent supplied by local procurement through Troop Supply channels.

CHAPTER 5

DIRECT SUPPORT MAINTENANCE INSTRUCTIONS

SECTION I. REPAIR PARTS, SPECIAL TOOLS AND EQUIPMENT

5-1. SPECIAL TOOLS AND EQUIPMENT

No special tools or equipment are required to perform direct and general support maintenance on the compressor.

5-2. MAINTENANCE REPAIR PARTS

Direct and general support maintenance repair parts for the air compressor are listed and illustrated in TM5-4310-363-24P.

SECTION II. GENERAL MAINTENANCE

5-3. GENERAL

This section contains maintenance data pertinent to direct support and general support maintenance personnel.

5-4. REPAIR AND REPLACEMENT STANDARDS

Table 5-1 lists manufacturer's sizes, tolerances, desired clearances and maximum allowable wear and clearance for the air compressor.

5-5. FRAME ASSEMBLY

a. Removal.

(1) Remove the compressor, paragraph 4-21.

(2) Remove the engine, paragraph 4-37.

(3) Remove the air receiver, paragraph 4-35.

b. Disassembly.

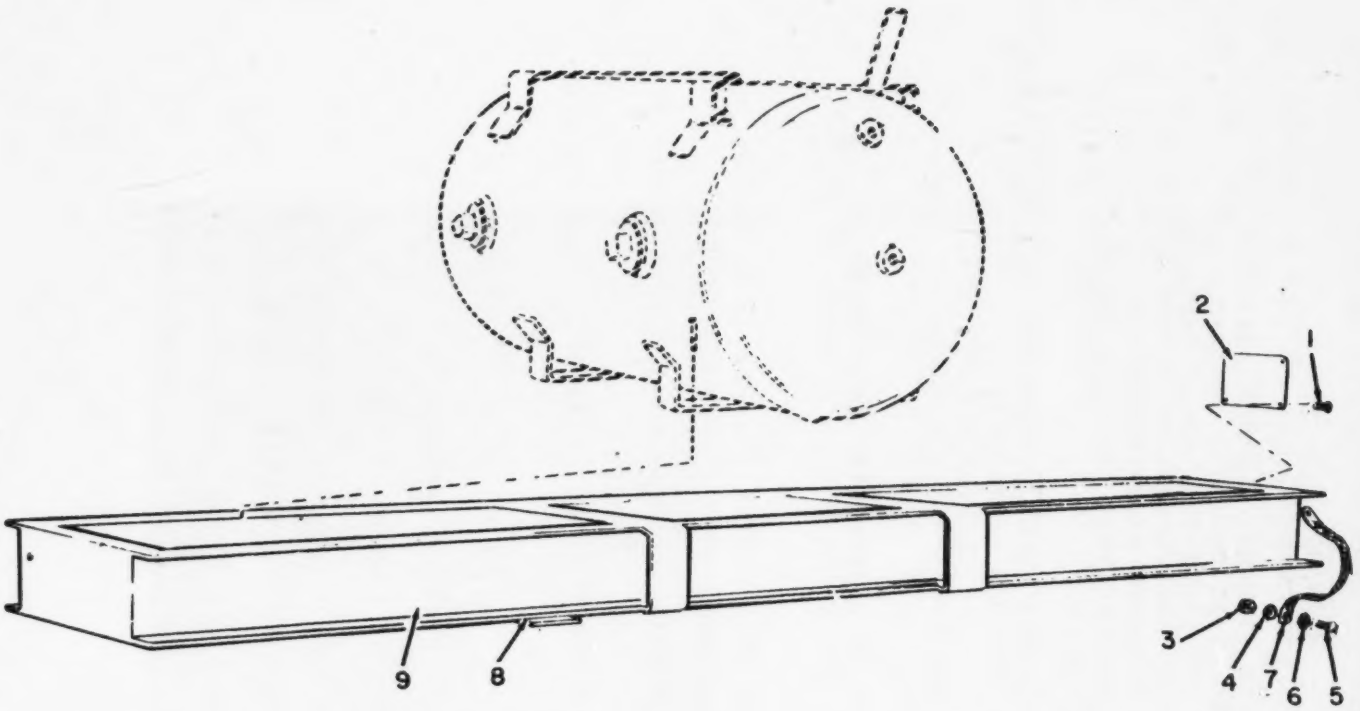
(1) Remove the drive screws (1, Fig. 5-1) and identification plate (2).

(2) Remove nut (3), washer (4), screw (5), washer (6), and strap (7).

(3) Remove side plates (8) from base (9).

Table 5-1. Compressor Repair and Replacement Standards (Inches)

Points of measurement	Manufacturer's dimensions and tolerances in inches		Desired clearance		Maximum allowable wear and clearance
	Minimum	Maximum	Minimum	Maximum	
Cylinders:					
Bore, low pressure	4.625 (11.7 cm)	4.625 (11.7 cm)	0.002 (.005 cm)	0.003 (.008 cm)	0.006 (.02 cm)
Bore, high pressure	2.500 (6.4 cm)	2.5005 (6.4 cm)			0.006 (.02 cm)
Taper	0.001 (.003 cm)	0.001 (.003 cm)			
Out-of-round	0.001 (.003 cm)	0.001 (.003 cm)			0.002 (.005 cm)
Crankshaft:					
Journal size, main bearing	1.376 (3.5 cm)	1.377 (3.5 cm)			
Journal size, connecting rod	1.623 (4.1 cm)	1.625 (4.1 cm)			
Journal out-of-round		0.0005 (.001 cm)			
Journal taper		0.0002 (.0005 cm)			
Pistons, piston pins, piston rings:					
Piston size, low pressure	4.6195 (11.7 cm)	4.6200 (11.7 cm)			0.0015 (.004 cm)
Piston size, high pressure	2.4970 (6.3 cm)	2.4975 (6.3 cm)			0.0015 (.004 cm)
Piston pin diameter, low pressure	0.8122 (2.0 cm)	0.8125 (2.1 cm)			0.001 (.003 cm)
Piston pin, diameter, high pressure	0.8122 (2.0 cm)	0.8125 (2.1 cm)			0.001 (.003 cm)
Piston pin length, low pressure	2.125 (5.4 cm)	2.135 (5.4 cm)	0.0002 (.0005 cm)	0.0009 (.002 cm)	
Piston pin length, high pressure	2.125 (5.4 cm)	2.135 (5.4 cm)	0.0002 (.0005 cm)	0.0009 (.002 cm)	
Piston pin clearance in piston			0.0002 (.0005 cm)	0.0009 (.002 cm)	
Piston to cylinder clearance, low pressure			0.00050 (.001 cm)	0.0055 (.01 cm)	
Piston to cylinder clearance, high pressure			0.0025 (.006 cm)	0.0030 (.008 cm)	
Piston ring side clearance, low pressure			0.0010 (.003 cm)	0.0025 (.006 cm)	
Piston ring side clearance, high pressure			0.0010 (.003 cm)	0.0045 (.01 cm)	
Piston ring gap, low pressure	0.013 (.03 cm)	0.023 (.06 cm)			
Piston ring gap, high pressure	0.007 (.02 cm)	0.017 (.04 cm)			
Connecting rods and journals:					
Bearing running clearance			0.0003 (.0008 cm)	0.0016 (.004 cm)	
Bearing side clearance			0.0040 (.01 cm)	0.0012 (.003 cm)	
Bearing internal diameter	1.376 (3.5 cm)	1.377 (3.5 cm)			
Rod internal diameter (cold)	1.627 (4.1 cm)	1.628 (4.1 cm)			



1. Screw
2. Identification plate
3. Nut
4. Washer
5. Screw
6. Washer
7. Strap
8. Plate
9. Base

Figure 5-1. Base assembly

c. Cleaning, Inspection and Repair.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean items with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect frame for cracks, breaks, and broken welds.

(3) Weld breaks or replace the base assembly.

d. Assembly.

(1) Install the side plates (8, Fig. 5-1) on the base (9).

(2) Install the strap (7) and secure with washer (6), screw (5), washer (4), and nut (3).

(3) Install the identification plate (2) and secure with drive screws (1).

e. Installation.

(1) Install air receiver, paragraph 4-35.

(2) Install engine, paragraph 4-37.

(3) Install compressor, paragraph 4-21.

5-6. HITCH, WHEELS AND RELATED COMPONENTS

Refer to trailer technical manual TM9-2330-251-15.

CHAPTER 6

GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

SECTION I. COMPRESSOR ASSEMBLY

6-1. GENERAL

The compressor is an air-cooled, two-stage, two-cylinder reciprocating compressor. There is one low pressure piston and one high piston operating off a crankshaft. The crankshaft is supported at both ends by tapered roller bearings.

6-2. PISTONS, PISTON RINGS, CONNECTING RODS, AND CYLINDER BLOCK

a. Removal and Disassembly.

(1) Remove the compressor, par. 4-21.

(2) Remove the oil drain plug and pipe nipple as illustrated in Figure 6-1, and drain oil.

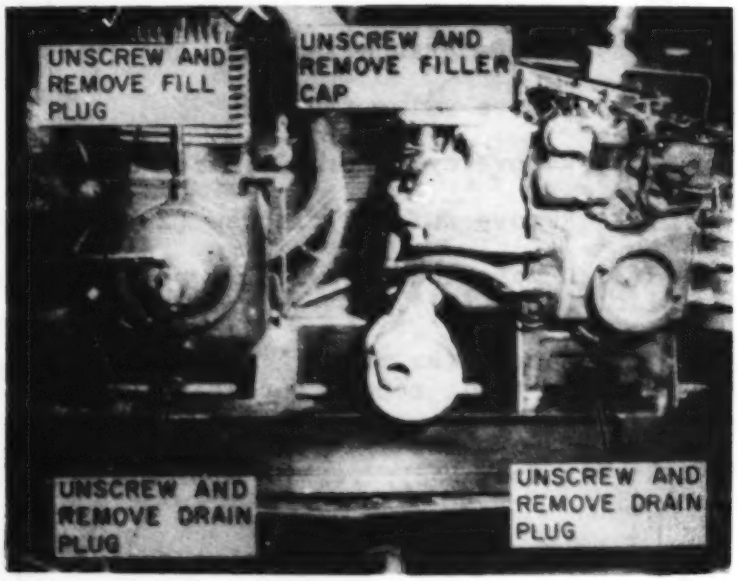


Figure 6-1. Oil filler plugs, filler caps, removal and installation.

(3) Remove the compressor flywheel as illustrated in Figure 4-5.

(4) Refer to Figure 4-9 and remove the tube assemblies, interstage safety valve, head unloaders, exhaust manifolds and intake and exhaust valves as follows:

(a) Remove the intercooler tubes (1, Fig. 4-9), nuts (2) and ferrules (3).

(b) Remove aftercooler tube (4), nuts (5) and ferrules (6).

(c) Remove the unloading tube (7) and elbows (8).

(d) Remove breather tube (9) and fitting (10).

(e) Unscrew the setscrew (11) and free the air cleaner (12).

(f) Remove the manifold tube (13) and elbow (14).

(g) Remove branch tee (15); remove actuating tubes (16).

(h) Remove branch tee (17) and tubes (18).

(i) Remove valve (19).

(j) Remove cylinder (20) from bracket (21).

(k) Remove nut (22), screw (23), and arm (24).

(l) Remove the screws (25) securing the bracket (26) to the pilot valve (27).

(m) Remove the mounting screws (28) and remove the intake manifold (29); remove intake valve assembly (30).

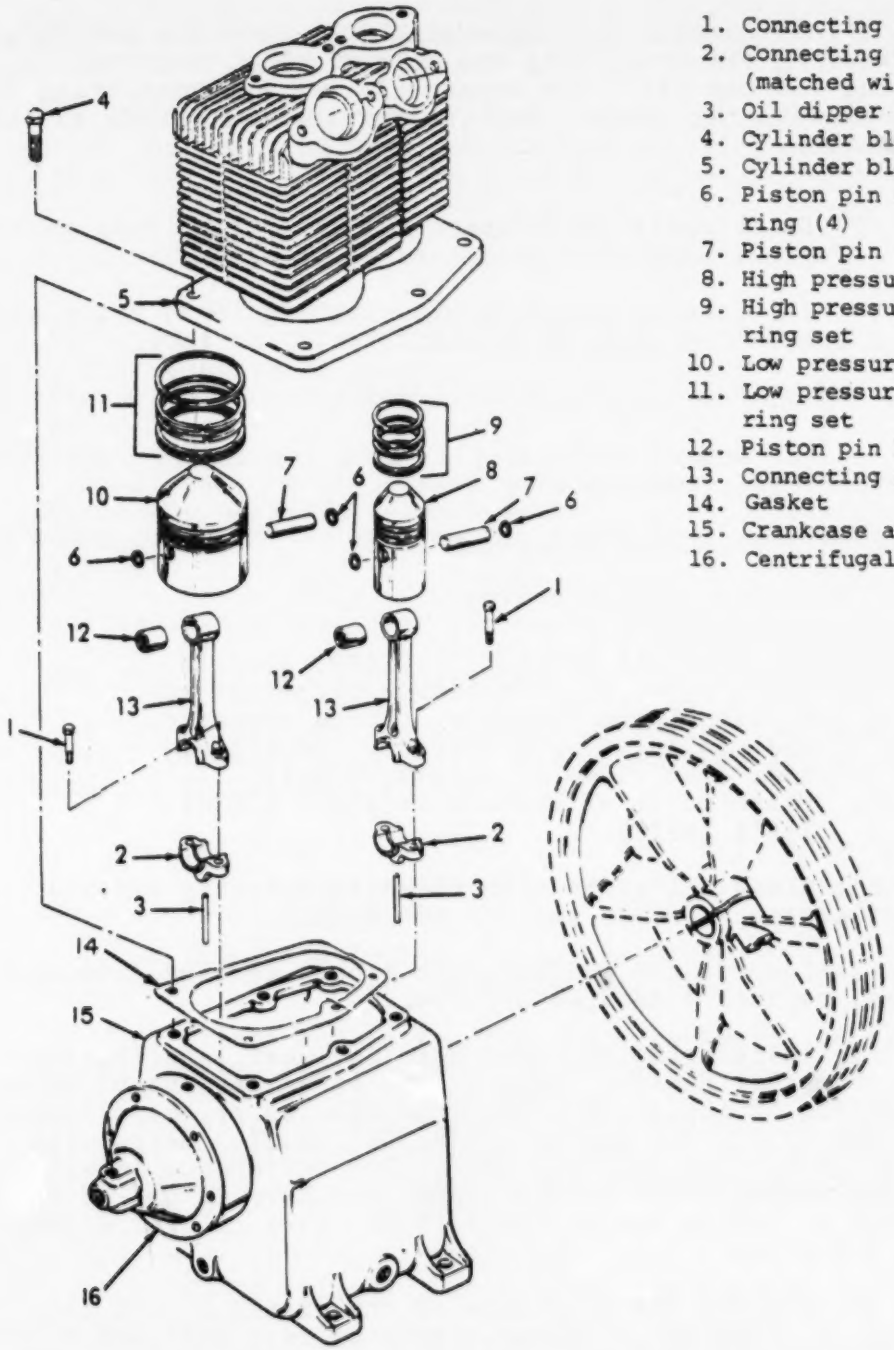
(n) Remove the interstage safety valve (31) from the intake manifold (33); remove mounting screws (32) and manifold (33).

(o) Remove the intake valve assembly (34).

(p) Remove mounting screws (34A), exhaust manifolds (35 and 36) and exhaust valve assemblies (37 and 38).

(5) Remove plugs (4 and 5, Fig. 4-17), cap (1), gage (3), and nipple (2) from crankcase.

(6) Remove the cylinder block (5, Fig. 6-2) from crankcase (15) by removing screws (4).



1. Connecting rod bolt (4)
2. Connecting rod cap (2) (matched with item 13)
3. Oil dipper (2)
4. Cylinder block screw (6)
5. Cylinder block
6. Piston pin retaining ring (4)
7. Piston pin (2)
8. High pressure piston
9. High pressure piston ring set
10. Low pressure piston
11. Low pressure piston ring set
12. Piston pin bearing
13. Connecting rod
14. Gasket
15. Crankcase assembly
16. Centrifugal Unloader

Figure 6-2. Cylinder block, pistons, and connecting rods, exploded view.

(7) Disconnect the connecting rods from the crankshaft by removing the connecting rod bolt (1, Fig. 6-2) and connecting rod cap (2). The connecting rod and connecting rod cap are matching parts. Tag cap for identification to aid reassembly.

(8) Disassemble the pistons and connecting rods as follows. Tag all parts to insure correct reassembly.

(a) Remove retaining ring (6, Fig. 6-2) and piston pins (7) and free pistons (8 and 10).

(b) Remove ring sets (9 and 11).

(c) Remove bearings (12) from connecting rods (13) and dipper (3) from cap (2).

b. Cleaning, Inspection and Repair.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean all parts with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Inspect the cylinder for broken cooling fins and cracks, replace a damaged cylinder.

(3) Inspect the cylinder bore for wear, scoring, pitting, or other damage. Inspect the bores for out-of-round by placing an inside micrometer in the top of the cylinder bore and taking two measurements, 90° apart. Repeat the procedure halfway down the bore. The difference between the two measurements is the amount the bore is out-of-round. Replace or resize the cylinder if the bore is over 0.002 inch (.005 cm).

(4) Measure the clearance of the piston pin in the piston pin bushing. Desired clearance is 0.0002 and 0.0009 inch (.0005 and .002 cm). Maximum allowable wear of piston pin diameter is 0.001 inch (.003 cm).

(5) Inspect the connecting rods for any visible damage or misalignment. Realign slightly twisted rods or replace if they are badly damaged.

(6) Place the piston rings in the cylinder bore in which they will be used and measure the ring gap with a feeler gage. Position the piston ring square with the cylinder bore about one half inch (1.27 cm) from the top. The correct gap for the small compression and oil rings is 0.0012 (.003 cm) plus or minus 0.005 inch (.01 cm).

(7) If the ring gap is less than the specified width, file across the butt ends of the ring to increase the gap to the required tolerance. If the ring gap is greater than 0.023 inch (.06 cm) for any ring, replace the entire set of rings.

(8) Measure the ring groove in the pistons for wear and side clearance, using a feeler gage between the ring and groove side wall. The desired ring groove clearance is 0.0010 to 0.0025 inch (.003 to .006 cm) for the low pressure rings and 0.0010 to 0.0045 inch (.003 to .01 cm) for the high pressure rings.

c. Assembly and Installation.

(1) Reassemble the pistons and connecting rods as follows. Lubricate each piston and connecting rod assembly with a light coat of engine oil.

(a) Install bearings (12, Fig. 6-2) in rods (13).

(b) Install rings sets (9 and 11) on pistons (8 and 10).

(c) Install pins (7) and retaining rings (6) to secure pistons (8 and 10) to connecting rods.

(2) Attach connecting rods to crankshaft and secure with connecting rod cap (2) and connecting rod bolt (1). Tighten bolt to 25 ft-lbs (3.5 kgm) maximum. The connecting rod cap and connecting rod are matched parts and should not be interchanged. Install the cylinder block (5) and gasket (14) to the crankcase (15). Tighten the cylinder block screws to 45 ft-lbs (6.2 kgm) torque.

NOTE

Align cylinder block on pistons carefully.

(3) Install the exhaust manifolds, head unloaders, interstage safety valve, tube assemblies and intake and exhaust valves as follows:

(a) Install the exhaust valve assemblies (37 and 38, Fig. 4-9) and the exhaust manifolds (35 and 36), secure with screws (34A).

(b) Install intake valve assembly (34); then, install intake manifold (33) and secure with screws (32). Install the interstage safety valve (31).

(c) Install the intake valve assembly (30); install intake manifold (29) and secure with screws (28).

(d) Install bracket (26) to pilot valve (27) and secure with screws (25).

(e) Install arm (24) and secure with screw (23) and nut (22).

(f) Install bracket (21) and cylinder (20).

(g) Install valve (19).

(h) Install tube (18) and branch tee (17).

(i) Install actuating tubes (16) and tee (15).

(j) Install elbow (14) and tube (13).

(k) Install the air cleaner (12) back on the intake manifold and secure with setscrew (11).

(l) Install fitting (10) and breather tube (9).

(m) Install elbows (8) and unloading tube (7).

(n) Install ferrules (6), nuts (5), and tube (4).

(o) Install ferrules (3), nuts (2), and intercooler tubes (1).

(4) Install plugs (4 and 5, Fig. 4-17), cap (1), gage (3), and nipple (2) in crankcase.

(5) Install compressor flywheel.

(6) Install compressor.

(7) Install V-belts, Fig. 4-5.

(8) Adjust "V" belts, paragraph 4-19.

(9) Install belt guard as illustrated in Fig. 4-4.

6-3. CRANKSHAFT, BEARINGS, AND OIL SEAL

a. Removal and Disassembly.

(1) Remove the compressor.

(2) Remove oil drain plug, Fig. 4-17.

(3) Remove flywheel, Fig. 4-5.

(4) Remove the centrifugal unloader, par. 4-28.

(5) Remove compressor assembly, Fig. 4-12.

(6) Remove the connecting rod caps (2, Fig. 6-2). The caps are matched with the connecting rod. Tag the cap to identify it with appropriate rod to assist in proper reassembly.

(7) Remove the crankshaft (5) from the crankcase (9) as illustrated in Figure 6-3. The bearings are pressed on the shaft and will come out with the crankshaft.

(8) Place the crankshaft in a suitable press and carefully remove the two tapered bearing cones and rollers (6) from the crankshaft.

(9) Using a blunt instrument drive the bearing cup (7) and oil seal (8) out of the flywheel side of the crankcase. Discard oil seal (8). Remove the bearing cup (7) from the loader housing.

b. Cleaning, Inspection and Repair.

WARNING

Dry cleaning solvent, P-D-680, used to clean parts is potentially dangerous to personnel and property. Avoid repeated and prolonged skin contact. Do not use near open flame or excessive heat. Flash point of solvent is 100°F (38°C)--138°F (59°C).

(1) Clean all parts except the bearings with cleaning solvent, Federal Specification P-D-680, and dry thoroughly.

(2) Place the bearings in a wire basket, dip in cleaning solvent, Federal Specification P-D-680, and dry with low pressure filtered air. Do not spin rollers. Dip in light oil.

(3) Inspect the bearings for broken, cracked, spalled, brindled or discolored rollers and/or railway. Replace if defective.

(4) Inspect the crankshaft for cracks, scores, and distortion. Measure the crankshaft bearing journals for wear, using an outside micrometer. If the shaft measures more than 0.0005 (.001 cm) out-of-round or is defective in any way, replace crankshaft.

1. Connecting rod bolt (4)
2. Connecting rod cap (2)
3. Oil dipper (2)
4. Cylinder block and piston assembly
5. Crankshaft
6. Bearing cone and roller (2)
7. Bearing cup (2)
8. Oil seal
9. Crankcase

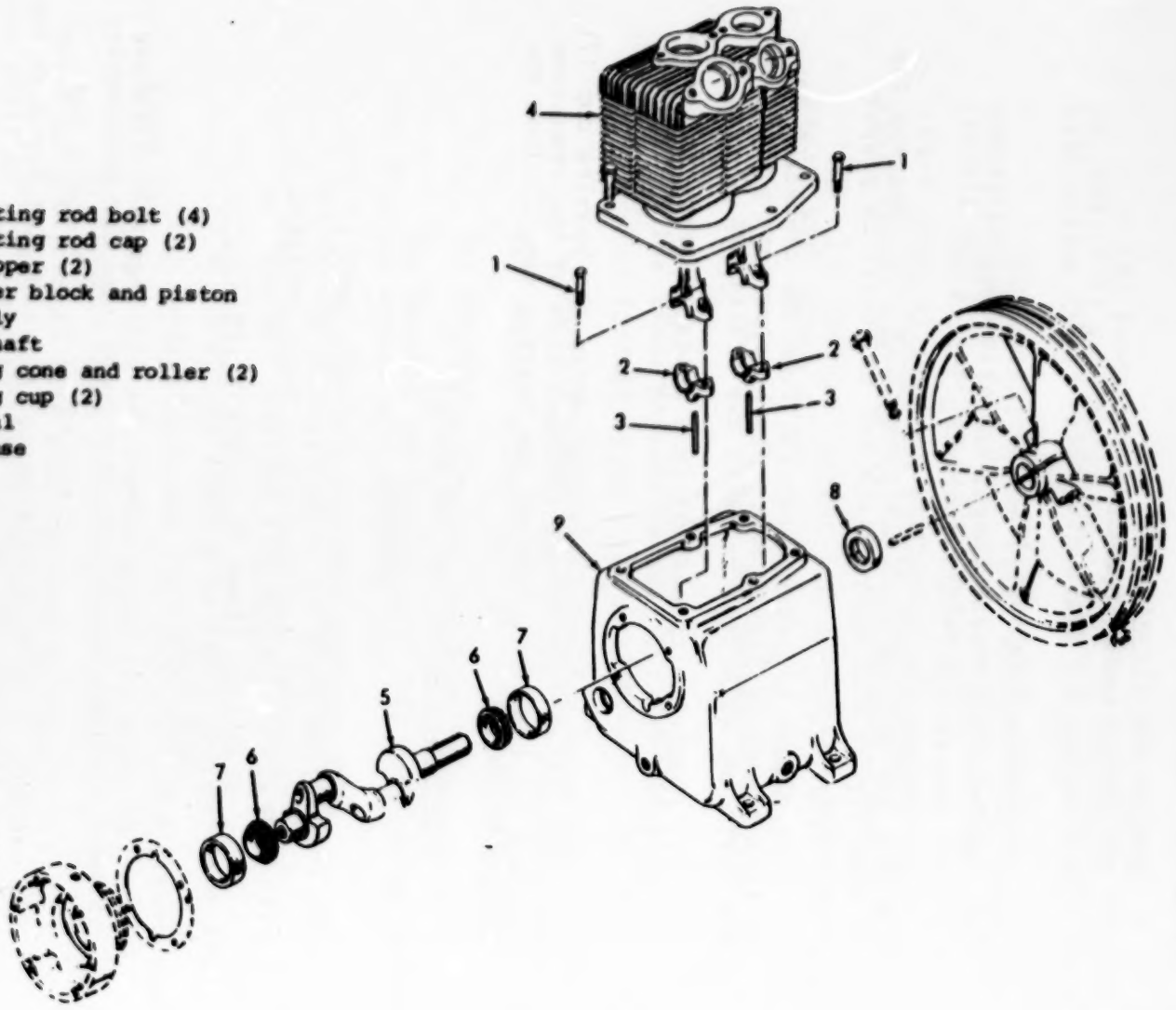


Figure 6-3. Crankshaft, crankcase and related parts, exploded view.

(5) Inspect the bearing cups for scores, burrs, pits, or burned surfaces. Replace defective bearing cups.

c. Assembly and Installation.

(1) Use a suitable bearing cup driver to press the bearing cup (7, Fig. 6-3) and a new oil seal (8) in the crankcase. Install the remaining bearing cup in the unloader body in the same manner.

(2) Press the tapered bearing cones and rollers (6) on the crankshaft (5).

(3) Install the assembled crankshaft (5) and tapered bearing cone and rollers in the crankcase. Install the assembled pistons and connecting rod to crankshaft as described in paragraph 6-2c(2).

(4) Install the centrifugal unloader, par. 4-28.

(5) Install the pipe nipple and oil drain plug in the crankcase, Fig. 4-17.

(6) Install flywheel, Fig. 4-5.

(7) Install compressor, Fig. 4-12.

SECTION II. SHIPMENT AND STORAGE

6-4. PREPARATION FOR SHIPMENT

a. Engine. Prepare engine as described in TM5-2805-203-14.

b. Trailer. Prepare trailer as described in TM9-2330-251-14.

c. Compressor.

(1) Completely drain the fuel system including, filter, tank and lines.

(2) Remove fuel filter element and clean. Clean filter body and bowl. Install clean element.

(3) Using moisture-free air, purge fuel system by discharging air into fuel tank with drain plug removed until all moisture is removed.

(4) Using moisture-free air and oil, spray inside of fuel tank with Grade 2 oil, Military Spec. MIL-L-21260, making certain oil vapor appears at the drain plug opening. Replace drain plug.

(5) Remove filler and drain plug from compressor and drain all oil from compressor system. Install drain plug when oil stops flowing. Fill crankcase to operating level with type P-10 preservative oil and install filler plug.

(6) Seal all openings with tape conforming to Fed. Spec. PPP-T-60.

(7) Cover compressor and engine with canvas cover and tie securely.

(8) Place inflator gage, air hose assembly and starter rope (Fig. 4-2) in a box and place box within tool box and lock tool box.

(9) If unit is shipped by rail, secure as shown in Fig. 4-1A.

(10) If unit is to be crated for shipment, a crate with the dimensions shown in Fig. 4-1B is required. Secure skid mounted compressor within crate in accordance with good commercial practice.

6-5. PREPARATION FOR STORAGE

a. General. Refer to para. 6-4a through 6-4c(8) and TM740-90-1.

APPENDIX A
REFERENCES

A-1. Fire Protection and Safety

TM 5-687 TM 9-1799	Maintenance of Fire Extinguisher

A-2. Lubrication

LO 5-2805-203-12	Engine, Gasoline, Military Standard (Models 4A032-1 and -2).

A-3. Engine

TM 5-2805-203-14	Operator, Organizational, Intermediate (Field), (Direct and General Support) and Depot Level Maintenance Manual Engine, Gasoline, 6 hp, MIL STD 4A032-1, 4A032-2

A-4. Cleaning

P-D-680	Dry Cleaning Solvent.
TM 38-230-1	Preservation, Packaging, and Packing of Military Supplies and Equipment (Cleaning).

A-5. Maintenance

TM5-4310-363-24P	Compressor, Reciprocating Air (Bauer Model KAB-545-15).
TM 38-750	The Army Maintenance Management System (TAMMS).

A-6. Shipment and Storage

TM 38-230-2	Preservation, Packaging and Packing of Military Supplies and Equipment (Packing).
TM 740-90-1	Administrative Storage of Equipment.

A-7. Trailer

TM 9-2330-251-14	Operator, Organizational, Direct Support and General Support Level Maintenance Manual, Trailer Cargo, 1/4 Ton, 3 Wheel, M416, M416A1, M416A2

APPENDIX B

MAINTENANCE ALLOCATION CHART

SECTION I. INTRODUCTION

B-1. GENERAL

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance levels.

b. Section II designates overall responsibility for the performance of maintenance functions on the identified end item or component and the work measurement time required to perform the functions by the designated maintenance level. The implementation of the maintenance functions upon the end item or component will be consistent with the assigned maintenance functions.

c. Section III lists the tools and test equipment required for each maintenance function as referenced from Section II.

d. Section IV contains supplemental instructions, explanatory notes and/or illustrations required for a particular maintenance function.

B-2. EXPLANATION OF COLUMNS IN SECTION II

a. Column (1), Group Number. Column 1 lists group numbers to identify related components, assemblies, sub-assemblies, and modules with their next higher assembly. The applicable groups are listed in the MAC in disassembly sequence beginning with the first group removed.

b. Column (2), Component/Assembly. This column contains the noun names of components, assemblies, sub-assemblies and modules for which maintenance is authorized.

c. Column (3), Maintenance Functions. This column lists the functions to be performed on the item listed in Column 2. The maintenance functions are defined as follows:

(1) Inspect. To determine serviceability of an item by comparing its physical, mechanical, and/or electrical characteristics with established standards through examination.

(2) Test. To verify serviceability and detect incipient failure by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

(3) Service. Operations required periodically to keep an item in proper operating condition, i.e., to clean (decontaminated), to preserve, to drain, to paint, or to replenish fuel, lubricants, hydraulic fluids, or compressed air supplies.

(4) Adjust. To maintain within prescribed limits, by bringing into proper or exact position, or by setting the operating characteristics to specified parameters.

(5) Align. To adjust specified variable elements of an item to bring about optimum or desired performance.

(6) Calibrate. To determine and cause corrections to be made or to be adjusted on instruments or test measuring and diagnostic equipments used in precision measurements. Consists of comparison of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

(7) Install. The act of emplacing, seating, or fixing into position an item, part or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

(8) Replace. The act of substituting a serviceable like type part, sub-assembly, or module (component or assembly) for an unserviceable counterpart.

(9) Repair. The application of maintenance services (inspect, test, service, adjust, align, calibrate, or replace) or other maintenance actions (welding, grinding, riveting, straightening, facing, remachining or resurfacing) to restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, sub-assembly, module (component or assembly), end item, or system.

(10) Overhaul. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards (i.e., DMWR) in appropriate technical publications. Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like new condition.

(11) Rebuild. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like new condition in accordance with original manufacturing standards. Rebuild is the highest degree of materiel maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles, etc.) considered in classifying Army equipment/components.

d. Column (4), Maintenance Level. This column is made up of sub-columns for each category of maintenance. Work time figures are listed in these sub-columns for the lowest level of maintenance authorized to perform the function listed in Column 3. These figures indicate the average active time required to perform the maintenance function at the indicated category of maintenance under typical field operating conditions.

e. Column (5), Tools and Equipment. This column is provided for referencing by code, the common tool sets (not individual tools), special tools, test and support equipment required to perform the designated function.

f. Remarks (6). This column is provided for any additional information deemed essential.

B-3. EXPLANATION OF COLUMNS IN SECTION III

a. Column (1), Reference Code. This column consists of an arabic number listed in sequence from column 5 of Section II. The number references the common tool sets, special tools and test equipment requirements.

b. Column (2), Maintenance Category. This column shows the lowest category of maintenance authorized to use the special tools or test equipment.

c. Column (3), Nomenclature. This column lists the name or identification of the common tool sets, special tools or test equipment.

d. Column (4), National/Nato Stock No. (NSN). This column is provided for the NSN or common tool sets, special tools and test equipment listed in the nomenclature column.

e. Column (5), Tool Number. This column lists the manufacturer's code and part number of tools and test equipment.

B-4. EXPLANATION OF COLUMNS IN SECTION IV

a. Reference Code. This column consists of the maintenance functions as described in paragraph B-2, step c.

b. Remarks. This column lists information pertinent to the maintenance function to be performed.

Section II. MAINTENANCE ALLOCATION CHART

(1) Group Number	(2) Component/Assembly	(3) Maintenance function	(4) Maintenance level C	O	F	H	D	(5) Tools and equipment	(6) Remarks
01	ENGINE AND RELATED PARTS								
0101	Engine	Inspect		0.1					Refer to TM 5-2805-203-14
		Service		0.2					
		Test		0.3					
		Replace		0.8					
		Repair			1.0				
0102	Mufflers	Inspect	0.1						
		Replace		0.2					
02	FUEL TANK AND RELATED PARTS								
0201	Tank Assembly, Fuel	Inspect	0.1						
		Replace		0.2					
		Repair		0.3					
0202	Lines, Fittings and Tubing	Inspect	0.1						
		Service		0.2					
		Replace		0.2					
03	AIR TANK, TOOL BOX, FRAME AND RELATED PARTS								
0301	Safety Relief Valve	Inspect		0.1					
		Replace		0.2					
0302	Check Valve	Inspect		0.1					
		Replace		0.4					
0303	Pressure Gage	Inspect		0.1					
		Replace		0.2					
0304	Draincock	Inspect		0.1					
		Replace		0.1					
0305	Globe Valve	Inspect		0.1					
		Replace		0.2					
0306	Air Tank	Inspect	0.1						
		Replace		0.6					
0307	Hoses	Inspect	0.1						
		Replace		0.2					

Section II. MAINTENANCE ALLOCATION CHART

(1) Group Number	(2) Component/Assembly	(3) Maintenance function	(4) Maintenance level C	O	F	H	D	(5) Tools and equipment	(6) Remarks
0308	Inflator Gage	Inspect	0.1						
		Replace		0.2					
0309	Frame, Hitch, Wheels, and Related Components	Inspect		0.1					Refer to TM 9-2330-251-15
		Replace			8.0				
		Repair			4.0				
0310	Base, Engine, and Compressor Mounting	Inspect		0.1					
		Replace			0.8				
		Repair			0.8				
04	BELT, BELT GUARD, PULLEY AND STUB SHAFT								
0401	Guard Assembly, Belt	Inspect	0.1						
		Replace		0.2					
		Repair		0.2					
0402	Belts, V, Matched Set	Inspect	0.1						
		Replace		0.2					
0403	Pulley Drive	Inspect	0.1						
		Replace		0.2					
05	COMPRESSOR ASSEMBLY	Inspect		0.2					
		Replace		0.8					
		Repair			1.0				
		Overhaul				4.0			
0501	Air Cleaner	Inspect	0.1						
		Replace	0.2						
0502	Oil Filler, Cap, and Plugs	Inspect	0.1						
		Replace	0.2						
0503	Flywheel	Inspect		0.2					
		Replace		0.3					
0504	Tube Assemblies	Inspect		0.2					
		Replace	0.3						
0505	Interstage Safety Valve	Inspect		0.1					
		Replace		0.2					

Section II. MAINTENANCE ALLOCATION CHART

(1) Group Number	(2) Component/Assembly	(3) Maintenance function	(4) Maintenance level C	O	F	H	D	(5) Tools and equipment	(6) Remarks
0506	Head Unloaders and Pilot Valve	Inspect		0.1					
		Replace		0.2					
		Repair		0.3					
		Adjust		0.2					
0507	Exhaust Manifolds	Inspect		0.1					
		Replace		0.5					
0508	Intake and Exhaust Valves	Inspect		0.2					
		Replace		0.3					
		Repair		0.6					
0509	Centrifugal Unloader	Inspect		0.2					
		Replace		0.3					
		Repair		0.5					
0510	Pistons, Connecting Rods and Cylinder Block	Inspect			0.3				
		Replace			0.5				
		Repair				2.0			
0511	Crankshaft, Bearings and Oil Seals	Inspect			0.4				
		Replace			0.6				
		Repair				2.5			
0512	Linkage, Throttle Control	Inspect	0.1						
		Adjust		0.2					
		Replace		0.3					
0513	Compression Valve	Inspect		0.1					
		Replace		0.2					
0514	Pneumatic Cylinder	Inspect		0.1					
		Replace		0.2					
06	FIRE EXTINGUISHER	Inspect	0.1						
		Service		0.2					
		Replace		0.1					

SECTION III. TOOL AND TEST EQUIPMENT REQUIREMENTS

(1) Reference code	(2) Maintenance Category	(3) Nomenclature	(4) National Stock number (NSN)	(5) Tool number
No special tools required.				

SECTION IV. REMARKS

Reference code	Remarks

APPENDIX C

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LIST

SECTION I. INTRODUCTION

C-1. SCOPE

This appendix lists components of end item and basic issue items for the compressor to help you inventory items required for safe and efficient operation.

C-2. GENERAL

The Components of End Item and Basic Issue Items Lists are divided into the following sections:

a. Section II. Components of End Item. This listing is for informational purposes only, and is not authority to requisition replacements. These items are part of the end item, but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. Section III. Basic Issue Items. These are the minimum essential items required to place the compressor in operation, to operate it, and to perform emergency repairs. Although shipped separately packaged BII must be with the compressor during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard-to-identify items. This manual is your authority to request/requisition replacement BII, based on TOE/MTOE authorization of the end item.

C-3. EXPLANATION OF COLUMNS

The following provides an explanation of columns found in the tabular listings:

a. Column (1)--Illustration Number (Illus Number). This column indicates the number of the illustration in which the item is shown.

b. Column (2)--National Stock Number. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

c. Column (3)--Description. Indicates the National item name and, if required, a minimum description to identify and locate the item. The last line for each item indicates the FSCM (in parentheses) followed by the part number.

d. Column (4)--Unit of Measure (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr).

e. Column (5)--Quantity required (Qty rqr). Indicates the quantity of the item authorized to be used with/on the equipment.

(1) Illus number	(2) National Stock number	(3) Description FSCM and Part number	Usable On Code	(4) U/M	(5) Qty rqr
		SECTION II Components of end item			
	4910-00-030-2365	Inflator assembly (94894) 61J21506		EA	1
		Hose, Air (57328) 20605-3000125		EA	1
		SECTION III Basic Issue Items			
		TM5-4310-363-14 DA Maintenance Manual		EA	1

APPENDIX D
ADDITIONAL AUTHORIZATION LIST

SECTION I. INTRODUCTION

D-1. SCOPE

This appendix lists additional items you are authorized for the support of the compressor.

D-2. GENERAL

This list identifies items that do not have to accompany the compressor and that do not have to be turned in with it. These items are all authorized to you by CTA, MTOE, TDA, or JTA.

D-3. EXPLANATION OF LISTING

National stock numbers, descriptions, and quantities are provided to help you identify and request the additional items you require to support this equipment.

(1) Illus number	(2) National Stock number	(3) Description FSCM and Part number	Usable On Code	(4) U/M	(5) Qty rqr
		Additional Authorization List			
	4210-00-555-8837	Extinguisher, Fire		EA	1

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RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL MANUALS

SOMETHING WRONG WITH THIS MANUAL?

THEN. . .JOT DOWN THE DOPE ABOUT IT ON THIS FORM, TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

FROM: (YOUR UNIT'S COMPLETE ADDRESS)
PFC JOHN DOE
COA, 3d ENGINEER BN
FT. LEONARD WOOD MO 63108

DATE

PUBLICATION NUMBER	DATE	TITLE
TM5-4310-363-14	23 May 1980	Compressor, Reciprocating Air, 15 CFM, 175 PSI, Tank Mounted, GED

BE EXACT. . .PIN-POINT WHERE IT IS

PAGE NO.	PARAGRAPH	FIGURE NO.	TABLE NO.	IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
6	2-1 a			In line 6 of paragraph 2-1a the manual states the engine has 6 cylinders. The engine on my set only has 4 cylinders. Change the manual to show 4 cylinders.
81		4-3		Callout 16 on figure 4-3 is pointing at a bolt. In the key to fig. 4-3, item 16 is called a shim. Please correct one or the other
125	line 20			I ordered a gasket, item 19 on figure B-16 by NSN 2910-00-762-3001. I got a gasket but it doesn't fit. Supply says I got what I ordered so the NSN is wrong. Please give me a good NSN.

SAMPLE

TYPED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER
JOHN DOE, PFC (268) 317-7111

SIGN HERE:
John Doe

TEAR ALONG DOTTED LINE

DA FORM 1 AUG 74 2028-2

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Materiel Readiness Command
ATTN: DRSTS-MTPS
4300 Goodfellow Boulevard
St. Louis, MO 63120

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RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL MANUALS

SOMETHING WRONG WITH THIS MANUAL?

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FROM: (YOUR UNIT'S COMPLETE ADDRESS)

DATE

PUBLICATION NUMBER	DATE	TITLE
TM5-4310-363-14	23 May 1980	Compressor, Reciprocating Air, 15 CFM, 175 PSI, Tank Mounted, GED

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PAGE NO.	PARAGRAPH	FIGURE NO.	TABLE NO.

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 dekagram = 10 grams = .35 ounce
1 hectogram = 10 dekagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C